PUPIL'S WORKBOOK

Stage 2 Addition Multiplication

Chi-San-Bop

Finger Calculation

Created by Pai and Pai

Written by Edwin M. Lieberthal

This CHISANBOP Workbook
Belongs to:

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Created by Pai and Pai Written by Edwin M. Lieberthal

CHISANBOP FINGER CALCULATION

Teacher's Workbook Guide

This Workbook (Stage 2 and Stage 3) has been designed for use by CHISANBOP pupils who have successfully completed Workbook #1 (Addition), the entire contents of which required Stage 1 manipulations exclusively (Unit by Unit counting). The pupil now proceeds to develop Stage 2 and Stage 3 skills, characterized as follows:

Stage 2: On recognition of the Number 5 or of higher numbers, pupil will first PRESS 5 and then PRESS Units in sequence to reach the desired whole. Pupil must learn to recognize whether the Fifth Finger is *Available* or *Not Available* . . . respectively allowing a direct Press of 5 or requiring a 5-Exchange.

Stage 3: On recognition of **any number**, pupil will **simultaneously PRESS the whole number**, bypassing unit or segmented progression entirely.

All ADDITION problems in this Workbook are to be calculated with Stage 2 manipulations. Instructions at the top of each page require the pupil to follow this procedure, using the oral count stipulated.

All MULTIPLICATION problems in this Workbook are to be calculated first with Stage 2 and ultimately Stage 3 manipulations. The latter requires mastery of the Multiplication technique explained in the Teacher's Manual (Pages 76 and 77) and diagrammed in this Workbook on Pages 71, 77, 83, 89, and 95.

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ORAL PRACTICE

Each day, prior to the CHISANBOP lesson, the exercise of Adding (Multiplying) the Numbers 5 through 9 is to be practiced, individually, by FIRST PRESSING 5 and subsequently either using the 5-Exchange (if Fifth Finger is *Not Available*) or Pressing 5 (if Fifth Finger is *AVAILABLE*), while all intermediate numbers continue to be achieved by PRESSING UNITS:

A) PRESS 5s, in sequence saying: "Five, Five, Five . . . etc. . . . 10 times until 50 is reached and pressed.

B) PRESS 6s, in sequence, saying: "Five, Six, Five, Six . . . etc. . . . 10 times, until 60 is reached and pressed.

C) PRESS 7s, in sequence, saying: "Five, Six, Seven, Five, Six, Seven . . . etc. . . . 10 times until 70 is reached and pressed.

D) PRESS 8s, in sequence, saying: "Five, Six, Seven, Eight, Five, Six, Seven, Eight . . . etc. . . . 10 times until 80 is reached and pressed.

E) PRESS 9s, in sequence, saying: Five, Six, Seven, Eight, Nine, Five, Six, Seven, Eight, Nine . . . etc. . . . 10 times until 90 is reached and pressed.

NOTE: During each of the above exercises, the teacher should periodically instruct pupils to "STOP" and "READ YOUR FINGERS . . . HOW MANY?" After pupils call out the accumulated total, the teacher instructs them to continue from that point to another intermediate "STOP" and, ultimately, to the final fixed total.

There are six calculations of Addition that represent key problems for the pupil and that must be recognized and corrected by the teacher. In each, the pupil tends to execute an incorrect finger exchange because the value of the Fifth Finger has not been firmly established in his mind. Daily practice with these combinations, using Stage 1 and then Stage 2 manipulations will reinforce error-free performance.

4 + 6	4 + 5	4 + 1
9 + 6	9 + 5	9 + 1

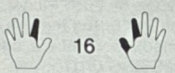
CARRYOVERS

Instructions for the finger Carryover procedure appear in your Teacher's Manual on Page 75.

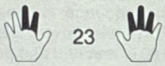
However, LEFT-HANDED PUPILS will require a modification:

$$\begin{array}{r} \boxed{2}\,\boxed{1} \\ 7\ 9\ 8 \\ 9\ 6\ 5 \\ +8\ 7\ 3 \\ \hline 3\ 6 \end{array}$$

In the above example, the LEFT-HANDED PUPIL, having registered the Units column total on his fingers thusly:



will first write the LEFT-HAND Carryover number (1) above the Tens column. Then he proceeds to enter the Right-Hand Number (6) below the Units column. Addition of the Tens column follows, yielding



The procedure is repeated, first entering the LEFT-HAND Carryover number (2) and then the RIGHT-HAND Number (3).

Ultimately, written entry of the Carryover is abandoned. Instead, pupil will enter the RIGHT-HAND Number below the line, while transferring the LEFT HAND NUMBER OF FINGERS to the RIGHT HAND. Having done so, addition of the next column can then begin.

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Early in the use of this Workbook, each pupil is to be encouraged to keep pencil in hand while performing manipulations. Achieving this skill will notably improve manipulative speed for all calculations by obviating the need to repeatedly put down and pick up a pencil.

PLACE VALUE

CHISANBOP aids in the awareness of Place Value when the pupil understands that numbers registered on the Right Hand always represent Units, while numbers registered on the Left Hand always represent Tens. The relationship of RIGHT and LEFT is naturally in keeping with the established positions of Units and Tens.

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In the Following Examples
the Fifth Finger is
Always Available
when number **5** is marked•
Pupil will say "Five"

IN CLASS

A.

1	1
1	2
1	1
+•5	+•5
8	9

B.

3	4
•5	4
1	4
+ 2	+•5
11	17

C.

4	•5
•5	4
1	3
+•5	+•5
15	17

D.

2	4
•5	•5
4	4
+•5	+•5
16	18

Name Robert Wolf

DO AT HOME

•5	•5
1	2
4	2
+•5	+ 4

3	2
•5	2
3	•5
+ 4	+ 4

1	•5
3	2
•5	3
+ 4	+•5

•5	4
3	•5
3	4
+•5	+•5

DO AT HOME

3 •5 4 +•5	6 4 3 +•5
2 •5 4 + 5	7 4 •5 + 3
9 4 •5 + 4	3 8 3 +•5
6 4 4 +•5	1 •5 4 +•5

CLASS SPEED COMPETITION

A.

4 •5 3 +•5	3 1 •5 + 2

TIME:

B.

•5 2 4 +•5	•5 3 2 +•5

TIME:

C.

4 •5 2 +•5	1 2 •5 + 4

TIME:

D.

4 •5 3 + 4	2 2 •5 + 3

TIME:

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Fifth Finger is

Always Available
when number **5** is marked•
Pupil will say:"Five"

IN CLASS

A.

•5	4
4	•5
4	2
+•5	+•5

B.

1	•5
•5	4
4	3
+•5	+•5

C.

•5	3
4	4
1	4
+•5	+•5

D.

•5	3
2	•5
2	1
+ 1	+ 1

Name _____

DO AT HOME

•5	4
3	4
2	4
+•5	+•5

3	2
4	•5
4	4
+•5	+•5

•5	2
1	1
2	•5
+ 3	+ 4

1	4
•5	3
4	4
+•5	+•5

DO AT HOME

3 1 •5 + 4	3 1 •5 2
•5 3 4 +•5	•5 4 4 +•5
4 3 4 +•5	2 2 •5 + 4
•5 2 4 +•5	3 5 4 +•5

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CLASS SPEED COMPETITION

A.

2 2 •5 + 3	1 3 •5 + 3

TIME:

B.

•5 2 4 +•5	•5 3 3 +•5

TIME:

C.

4 4 4 +•5	3 3 4 +•5

TIME:

D.

•5 2 4 +•5	4 •5 4 +•5

TIME:

Fifth Finger is

Always Available
when number **5** is marked•
Pupil will say: "Five"

IN CLASS

A.

1	4
1	•5
1	4
+•5	+•5

B.

•5	2
1	2
2	•5
+ 4	+ 3

C.

3	4
4	•5
3	2
+•5	+•5

D.

•5	•5
4	1
2	4
+•5	+ 4

Name _____

DO AT HOME

1	2
2	•5
•5	4
+ 3	+•5

•5	3
4	•5
3	4
+•5	+•5

3	2
•5	1
3	•5
+ 4	+ 4

3	4
•5	•5
3	4
+•5	+•5

DO AT HOME

2 4 4 + •5	1 2 •5 + 4
2 •5 4 + •5	•5 4 4 + 4
1 3 •5 + 4	•5 2 3 + •5
1 3 •5 + 1	1 2 •5 + 3

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CLASS SPEED COMPETITION

A.

4 4 2 + •5	2 •5 2 + 4

TIME:

B.

3 •5 2 + •5	•5 3 4 + 1

TIME:

C.

1 2 1 + •5	•5 1 1 + 4

TIME:

D.

1 3 •5 + 3	2 2 •5 + 2

TIME:

In the following examples
the Fifth Finger is
NOT AVAILABLE
when number **5** is marked•

IN CLASS

A.

5	5
•5	•5
5	4
+•5	+ 5

B.

5	5
•5	•5
3	2
+ 5	+ 5

C.

5	4
•5	1
1	•5
+ 5	+ 5

D.

4	4
2	3
•5	•5
+ 5	+ 5

Name _____

DO AT HOME

2	4
1	3
4	1
+•5	+•5

5	4
•5	3
2	2
+ 5	+•5

2	3
2	1
1	5
+•5	+•5

1	3
5	1
1	4
+•5	+•5

DO AT HOME

3 3 •5 + 5	4 5 •5 + 4
5 •5 5 + 4	3 5 •5 + 3
3 4 •5 + 5	2 3 •5 + 4
1 2 3 +•5	3 4 2 +•5

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CLASS SPEED COMPETITION

A.

3 2 •5 + 5	4 4 •5 + 5

TIME:

B.

4 5 •5 + 5	5 •5 5 +•5

TIME:

C.

2 3 •5 + 5	2 2 5 +•5

TIME:

D.

1 1 5 +•5	5 3 1 +•5

TIME:

Fifth Finger is
NOT AVAILABLE
when number **5** is marked •

IN CLASS

A.

4	3
3	1
•5	5
+ 5	+•5

B.

5	1
•5	3
2	4
+ 5	+•5

C.

2	3
4	2
•5	•5
+ 5	+ 5

D.

4	4
1	1
•5	2
+ 5	+•5

Name _____

DO AT HOME

2	5
3	•5
2	3
+•5	+ 5

2	3
1	4
5	•5
+•5	+ 5

1	3
5	5
•5	•5
+ 2	+ 4

4	5
1	2
•5	•5
+ 5	+ 4

DO AT HOME

3 1 4 + •5	3 3 •5 + 5
2 2 5 + •5	3 4 •5 + 5
4 5 •5 + 5	2 3 4 + •5
5 •5 4 + 5	4 5 •5 + 3

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CLASS SPEED COMPETITION

A.

2 1 4 + •5	3 2 •5 + 5

TIME:

B.

1 1 5 + •5	4 3 •5 + 5

TIME:

C.

5 •5 5 + •5	4 1 •5 + 5

TIME:

D.

1 5 •5 + 1	2 5 •5 + 2

TIME:

Fifth Finger is
NOT AVAILABLE
when number 5 is marked•

IN CLASS

A.

1	4
2	5
3	•5
+•5	+ 3

B.

1	5
5	4
2	•5
+•5	+ 4

C.

2	4
5	1
2	4
+•5	+•5

D.

2	3
3	3
•5	3
+ 5	+•5

Name _____

DO AT HOME

2	1
1	4
4	•5
+•5	+ 1

3	2
4	1
1	5
+•5	+•5

2	3
2	5
2	•5
+•5	+ 4

1	5
2	•5
3	4
+•5	+ 4

DO AT HOME

3 4 •5 + 5	4 5 •5 + 1
3 5 •5 + 4	2 4 •5 + 2
3 3 3 +•5	2 2 2 +•5
1 1 4 +•5	2 2 3 +•5

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CLASS SPEED COMPETITION

A.

1 1 3 +•5	2 1 5 +•5

TIME:

B.

4 3 2 +•5	5 •5 1 + 5

TIME:

C.

5 4 •5 + 4	2 5 •5 + 3

TIME:

D.

1 1 5 +•5	2 2 5 +•5

TIME:

Press Fifth Finger

AND 1 MORE
when number **6** is marked•
Pupil will say: "Five—Six"

IN CLASS

A.

4	5
3	5
5	4
+•6	+•6

B.

3	•6
5	5
5	•6
+•6	+ 5

C.

4	4
•6	•6
5	4
+ 5	+•6

D.

5	2
5	3
4	5
+•6	+•6

Name _____

DO AT HOME

1	5
1	2
•6	5
+ 5	+•6

3	3
5	•6
5	5
+•6	+•6

5	4
5	1
•6	5
+ 4	+•6

•6	•6
3	2
5	5
+ 1	+ 2

DO AT HOME

3	4
•6	•6
5	4
+•6	+•6
4	4
•6	•6
3	1
+•6	+•6
1	•6
5	4
5	4
+•6	+•6
•6	5
4	5
2	4
+•6	+•6

CLASS SPEED COMPETITION

A.

2	4
•6	•6
5	5
+•6	+ 1

TIME:

B.

2	4
5	4
5	5
+•6	+•6

TIME:

C.

4	•6
3	4
5	1
+•6	+•6

TIME:

D.

•6	4
3	•6
5	5
+ 1	+ 3

TIME:

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Press Fifth Finger

AND 1 MORE
when number **6** is marked•
Pupil will say: "Five—Six"

IN CLASS

A.

1	5
1	5
2	4
+•6	+•6

B.

1	5
2	4
1	5
+•6	+•6

C.

1	1
1	2
1	1
+•6	+•6

D.

4	2
5	1
5	1
+•6	+•6

Name _____

DO AT HOME

5	•6
5	5
4	4
+•6	+ 5

2	3
•6	1
5	•6
+•6	+•6

4	•6
5	4
5	•6
+•6	+ 5

•6	•6
5	5
•6	3
+ 5	+•6

DO AT HOME

5 4 5 + •6	3 •6 5 + •6
2 •6 5 + •6	5 4 3 + •6
4 •6 5 + 5	3 •6 5 + 1
2 7 5 + •6	3 •6 1 + •6

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CLASS SPEED COMPETITION

A.

3 •6 5 + 5	1 3 •6 + •6

TIME:

B.

4 5 5 + •6	2 5 5 + •6

TIME:

C.

2 2 •6 + 1	3 •6 5 + 1

TIME:

D.

•6 3 5 + 5	4 5 4 + •6

TIME:

Press Fifth Finger

AND 1 MORE
when number 6 is marked•
Pupil will say: "Five—Six"

IN CLASS

A.

4	5
•6	5
•6	•6
+ 5	+ 4

B.

•6	1
5	•6
•6	5
+ 3	+•6

C.

1	•6
3	3
•6	5
+•6	+•6

D.

3	4
•6	5
5	5
+•6	+•6

Name _____

DO AT HOME

1	2
1	3
2	5
+•6	+•6

4	1
5	1
5	1
+•6	+•6

3	5
6	5
5	•6
+•6	+ 5

•6	1
5	2
•6	1
+ 5	+•6

DO AT HOME

4 1 5 + •6	4 5 1 + •6
3 1 •6 + 5	3 1 •6 + •6
1 2 •6 + 5	4 4 5 + •6
3 •6 5 + •6	•6 1 5 + •6

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CLASS SPEED COMPETITION

A.

3 1 •6 + 5	4 1 5 + •6

TIME:

B.

1 2 •6 + 5	3 4 5 + •6

TIME:

C.

2 2 •6 + •6	3 •6 5 + •6

TIME:

D.

2 •6 4 + •6	5 5 •6 + 5

TIME:

Press 5—Exchange

AND 1 MORE when number 6 is marked• Pupil will say: "Exchange Five—Six"

IN CLASS

A.

5	6
•6	•6
6	6
+•6	+•6

B.

5	3
•6	6
5	•6
+•6	+•6

C.

1	4
6	1
•6	•6
+ 6	+ 6

D.

2	3
2	6
5	•6
+•6	+ 4

Name _____

DO AT HOME

2	4
6	6
•6	5
+ 6	+•6

5	3
•6	6
5	•6
+•6	+ 1

6	6
•6	•6
5	2
+•6	+ 1

4	1
1	3
•6	4
+ 5	+•6

DO AT HOME

2 7 •6 + 3	3 6 •6 + 2
6 •6 2 + 6	4 6 5 +•6
4 1 •6 + 4	4 5 •6 +•6
4 4 •6 + 6	4 5 •6 + 5

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CLASS SPEED COMPETITION

A.

3 6 •6 +•6	2 6 •6 + 5

TIME:

B.

2 1 6 +•6	6 •6 5 +•6

TIME:

C.

4 1 •6 + 5	3 2 •6 + 4

TIME:

D.

4 1 •6 + 6	6 •6 6 +•6

TIME:

Press 5—Exchange

AND 1 MORE when number **6** is marked• Pupil will say: "Exchange Five—Six"

IN CLASS

A.

3	4
1	5
5	•6
+•6	+•6

B.

3	5
6	4
•6	•6
+ 1	+ 4

C.

6	1
3	2
•6	6
+ 5	+•6

D.

5	3
•6	3
3	3
+ 4	+•6

Name _____

DO AT HOME

4	3
2	3
•6	•6
+ 5	+ 3

4	2
5	2
•6	5
+ 5	+•6

1	2
3	4
5	3
+•6	+•6

6	5
5	•6
4	5
+•6	+•6

DO AT HOME

1 2 4 + •6	4 5 •6 + 3
6 5 4 + •6	3 6 •6 + •6
2 1 6 + •6	5 4 •6 + •6
3 3 3 + •6	2 2 5 + •6

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CLASS SPEED COMPETITION

A.

5 5 5 + •6	5 4 •6 + 2

TIME:

B.

2 2 5 + •6	4 5 •6 + 5

TIME:

C.

3 1 5 + •6	4 5 •6 + •6

TIME:

D.

6 •6 3 + •6	5 5 6 + •6

TIME:

Press 5—Exchange

AND 1 MORE when number **6** is marked• Pupil will say: "Exchange Five—Six"

IN CLASS

A.

1	2
3	2
1	5
+•6	+•6

B.

6	4
5	6
5	5
+•6	+•6

C.

6	6
4	5
5	5
+•6	+•6

D.

1	4
3	1
5	2
+•6	+•6

Name _____

DO AT HOME

1	5
4	•6
•6	5
+ 6	+•6

6	1
•6	6
6	•6
+•6	+ 4

1	4
2	5
3	•6
+•6	+ 5

6	5
4	5
6	•6
+•6	+•6

DO AT HOME

$$\begin{array}{r} 2 \\ 5 \\ \bullet 6 \\ +\ 6 \\ \hline \end{array} \qquad \begin{array}{r} 3 \\ 3 \\ \bullet 6 \\ +\ 3 \\ \hline \end{array}$$

$$\begin{array}{r} 3 \\ 2 \\ \bullet 6 \\ +\ 5 \\ \hline \end{array} \qquad \begin{array}{r} 1 \\ 5 \\ \bullet 6 \\ +\ 6 \\ \hline \end{array}$$

$$\begin{array}{r} 3 \\ 4 \\ \bullet 6 \\ +\ 2 \\ \hline \end{array} \qquad \begin{array}{r} 6 \\ \bullet 6 \\ 6 \\ +\ 3 \\ \hline \end{array}$$

$$\begin{array}{r} 2 \\ 6 \\ 1 \\ +\bullet 6 \\ \hline \end{array} \qquad \begin{array}{r} 3 \\ 6 \\ \bullet 6 \\ +\ 5 \\ \hline \end{array}$$

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CLASS SPEED COMPETITION

A.

$$\begin{array}{r} 3 \\ 3 \\ 3 \\ +\bullet 6 \\ \hline \end{array} \qquad \begin{array}{r} 1 \\ 5 \\ \bullet 6 \\ +\ 5 \\ \hline \end{array}$$

TIME:

B.

$$\begin{array}{r} 2 \\ 3 \\ 3 \\ +\bullet 6 \\ \hline \end{array} \qquad \begin{array}{r} 2 \\ 2 \\ 1 \\ +\bullet 6 \\ \hline \end{array}$$

TIME:

C.

$$\begin{array}{r} 2 \\ 3 \\ \bullet 6 \\ +\ 6 \\ \hline \end{array} \qquad \begin{array}{r} 1 \\ 3 \\ 1 \\ +\bullet 6 \\ \hline \end{array}$$

TIME:

D.

$$\begin{array}{r} 3 \\ 1 \\ 1 \\ +\bullet 6 \\ \hline \end{array} \qquad \begin{array}{r} 6 \\ 5 \\ 5 \\ +\bullet 6 \\ \hline \end{array}$$

TIME:

Press Five

AND 2 MORE when number **7** is marked• Pupil will say: "Five—Six—Seven"

IN CLASS

A.

1	2
•7	•7
4	5
+•7	+•7

B.

3	4
•7	•7
•7	•7
+ 6	+ 4

C.

1	2
3	2
•7	•7
+•7	+ 6

D.

4	3
5	6
5	5
+•7	+•7

Name _____

DO AT HOME

•7	6
5	5
•7	6
+ 6	+ 5

4	3
5	5
1	6
+ 5	+•7

2	1
5	5
5	5
+•7	+ 4

4	4
1	•7
6	•7
+•7	+ 6

DO AT HOME

5 6 3 + •7	3 6 5 + •7
6 6 •7 + 6	4 •7 •7 + 6
5 5 3 + •7	6 5 •7 + 5
•7 6 5 + 6	3 •7 3 + •7

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CLASS SPEED COMPETITION

A.

5 5 4 + •7	4 •7 3 + •7

TIME:

B.

5 6 •7 + •7	3 •7 3 + •7

TIME:

C.

6 6 •7 + •7	•7 6 •7 + 5

TIME:

D.

•7 6 5 + 6	•7 5 2 + 6

TIME:

Press Five

AND 2 MORE when number **7** is marked• Pupil will say: "Five—Six—Seven

IN CLASS

A.

4	4
6	1
•7	6
+ 5	+•7

B.

•7	1
6	4
•7	6
+•7	+•7

C.

5	1
6	1
•7	•7
+ 6	+ 6

D.

•7	2
6	2
5	•7
+ 6	+ 6

Name _____

DO AT HOME

2	1
6	2
6	•7
+•7	+•7

6	•7
5	6
•7	•7
+ 6	+ 4

2	4
•7	1
5	6
+•7	+•7

5	•7
6	6
•7	5
+ 6	+ 6

DO AT HOME

$$\begin{array}{r} 2 \\ 5 \\ 5 \\ +\bullet 7 \\ \hline \end{array} \qquad \begin{array}{r} 3 \\ 5 \\ 6 \\ +\bullet 7 \\ \hline \end{array}$$

$$\begin{array}{r} 4 \\ 4 \\ 6 \\ +\bullet 7 \\ \hline \end{array} \qquad \begin{array}{r} 1 \\ \bullet 7 \\ 6 \\ +\ 5 \\ \hline \end{array}$$

$$\begin{array}{r} 3 \\ \bullet 7 \\ 5 \\ +\ 6 \\ \hline \end{array} \qquad \begin{array}{r} 4 \\ \bullet 7 \\ 6 \\ +\ 6 \\ \hline \end{array}$$

$$\begin{array}{r} 2 \\ \bullet 7 \\ 6 \\ +\ 6 \\ \hline \end{array} \qquad \begin{array}{r} 5 \\ 6 \\ \bullet 7 \\ +\ 5 \\ \hline \end{array}$$

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CLASS SPEED COMPETITION

A.

$$\begin{array}{r} 3 \\ 1 \\ 6 \\ +\bullet 7 \\ \hline \end{array} \qquad \begin{array}{r} 4 \\ 5 \\ 5 \\ +\bullet 7 \\ \hline \end{array}$$

TIME:

B.

$$\begin{array}{r} \bullet 7 \\ 6 \\ \bullet 7 \\ +\ 1 \\ \hline \end{array} \qquad \begin{array}{r} 5 \\ 6 \\ 3 \\ +\bullet 7 \\ \hline \end{array}$$

TIME:

C.

$$\begin{array}{r} \bullet 7 \\ 5 \\ 6 \\ +\ 6 \\ \hline \end{array} \qquad \begin{array}{r} 4 \\ 5 \\ 6 \\ +\ 6 \\ \hline \end{array}$$

TIME:

D.

$$\begin{array}{r} 3 \\ 5 \\ 5 \\ +\bullet 7 \\ \hline \end{array} \qquad \begin{array}{r} 4 \\ 5 \\ 5 \\ +\bullet 7 \\ \hline \end{array}$$

TIME:

Press Five

AND 2 MORE when number **7** is marked• Pupil will say: "Five—Six—Seven

IN CLASS

A.

3	2
1	•7
•7	1
+ 4	+ 3

B.

1	•7
•7	2
3	2
+ 4	+•7

C.

4	5
1	6
5	3
+•7	+•7

D.

4	1
•7	1
2	•7
+•7	+ 1

Name _____

DO AT HOME

1	5
2	5
•7	•7
+ 5	+ 5

•7	6
5	6
•7	•7
+ 6	+ 6

3	4
•7	5
1	1
+ 6	+•7

5	4
4	1
1	6
+•7	+•7

DO AT HOME

1 •7 5 +•7	3 6 5 +•7
2 1 •7 +•7	2 •7 6 + 5
2 2 •7 +•7	1 5 6 +•7
4 5 5 +•7	3 •7 4 +•7

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CLASS SPEED COMPETITION

A.

5 3 5 +•7	5 6 •7 + 4

TIME:

B.

2 •7 6 + 5	2 •7 5 + 1

TIME:

C.

5 6 •7 + 6	4 4 5 +•7

TIME:

D.

2 1 •7 +•7	2 6 6 +•7

TIME:

Press 5—Exchange

AND 2 MORE when number 7 is marked• Pupil will say: "Exchange Five—Six—Seven"

IN CLASS

A.

7	4
•7	7
7	4
+ 7	+•7

B.

7	1
•7	7
5	•7
+ 6	+•7

C.

3	5
7	•7
6	5
+•7	+•7

D.

6	7
•7	•7
5	1
+•7	+•7

Name _____

DO AT HOME

2	1
1	3
2	4
+•7	+•7

5	7
3	•7
•7	7
+ 5	+ 4

6	4
3	1
•7	•7
+•7	+ 5

7	3
6	2
5	•7
+•7	+ 7

DO AT HOME

$$\begin{array}{r} 3 \\ 7 \\ 7 \\ +\bullet 7 \\ \hline \end{array} \qquad \begin{array}{r} 2 \\ 6 \\ \bullet 7 \\ +\bullet 7 \\ \hline \end{array}$$

$$\begin{array}{r} 4 \\ 7 \\ 5 \\ +\bullet 7 \\ \hline \end{array} \qquad \begin{array}{r} 2 \\ 3 \\ \bullet 7 \\ +\ 7 \\ \hline \end{array}$$

$$\begin{array}{r} 6 \\ \bullet 7 \\ 5 \\ +\bullet 7 \\ \hline \end{array} \qquad \begin{array}{r} 3 \\ 5 \\ \bullet 7 \\ +\ 6 \\ \hline \end{array}$$

$$\begin{array}{r} 2 \\ 2 \\ 5 \\ +\bullet 7 \\ \hline \end{array} \qquad \begin{array}{r} 3 \\ 6 \\ 6 \\ +\bullet 7 \\ \hline \end{array}$$

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CLASS SPEED COMPETITION

A.

$$\begin{array}{r} 6 \\ \bullet 7 \\ 5 \\ +\bullet 7 \\ \hline \end{array} \qquad \begin{array}{r} 5 \\ \bullet 7 \\ 2 \\ +\ 7 \\ \hline \end{array}$$

TIME:

B.

$$\begin{array}{r} 2 \\ 7 \\ \bullet 7 \\ +\bullet 7 \\ \hline \end{array} \qquad \begin{array}{r} 4 \\ 1 \\ \bullet 7 \\ +\ 7 \\ \hline \end{array}$$

TIME:

C.

$$\begin{array}{r} 1 \\ 1 \\ 3 \\ +\bullet 7 \\ \hline \end{array} \qquad \begin{array}{r} 3 \\ 1 \\ 1 \\ +\bullet 7 \\ \hline \end{array}$$

TIME:

D.

$$\begin{array}{r} 6 \\ 5 \\ 7 \\ +\bullet 7 \\ \hline \end{array} \qquad \begin{array}{r} 7 \\ 6 \\ 5 \\ +\bullet 7 \\ \hline \end{array}$$

TIME:

Press 5—Exchange

AND 2 MORE when number **7** is marked• Pupil will say: "Exchange Five—Six—Seven"

IN CLASS

A.

2	1
7	3
•7	5
+•7	+•7

B.

4	7
5	2
•7	•7
+•7	+ 6

C.

5	3
4	6
•7	•7
+•7	+ 4

D.

6	4
3	1
•7	•7
+ 3	+ 3

Name _____

DO AT HOME

1	6
6	4
1	5
+•7	+•7

7	5
3	5
7	7
+•7	+•7

1	4
1	2
7	2
+•7	+•7

4	4
5	5
•7	•7
+ 6	+ 4

DO AT HOME

4	9
1	1
•7	7
+ 7	+•7
3	3
4	2
•7	1
+ 6	+•7
7	7
6	1
5	1
+•7	+•7
1	2
5	6
•7	•7
+ 7	+•7

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CLASS SPEED COMPETITION

A.

7	3
2	6
•7	•7
+ 4	+•7

TIME:

B.

4	5
5	4
•7	•7
2	3

TIME:

C.

4	7
7	•7
5	2
•7	•7

TIME:

D.

4	3
1	4
3	•7
+•7	+ 1

TIME:

Press Five

AND 3 MORE when number **8** is marked• Pupil will say: "Five—Six—Seven—Eight"

IN CLASS

A.

4	•8
•8	1
1	5
+•8	+•8

B.

4	4
•8	•8
2	•8
+•8	+ 5

C.

•8	•8
2	3
•8	•8
+ 7	+ 7

D.

•8	1
1	•8
1	1
+ 5	+•8

Name _____

DO AT HOME

4	7
1	6
7	•8
+•8	+ 5

•8	7
5	6
•8	•8
+•8	+•8

6	•8
7	6
•8	1
+ 4	+ 7

3	4
5	5
5	1
+•8	+•8

DO AT HOME

$$\begin{array}{r} 7 \\ 1 \\ 4 \\ +\bullet 8 \\ \hline \end{array} \qquad \begin{array}{r} 4 \\ 1 \\ 5 \\ +\bullet 8 \\ \hline \end{array}$$

$$\begin{array}{r} \bullet 8 \\ 7 \\ 7 \\ +\bullet 8 \\ \hline \end{array} \qquad \begin{array}{r} 2 \\ \bullet 8 \\ 5 \\ +\ 7 \\ \hline \end{array}$$

$$\begin{array}{r} 4 \\ \bullet 8 \\ \bullet 8 \\ +\bullet 8 \\ \hline \end{array} \qquad \begin{array}{r} 4 \\ \bullet 8 \\ 2 \\ +\bullet 8 \\ \hline \end{array}$$

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CLASS SPEED COMPETITION

A.

$$\begin{array}{r} 6 \\ 2 \\ 4 \\ +\bullet 8 \\ \hline \end{array} \qquad \begin{array}{r} \bullet 8 \\ 7 \\ 7 \\ +\bullet 8 \\ \hline \end{array}$$

TIME:

B.

$$\begin{array}{r} \bullet 8 \\ 6 \\ 5 \\ +\ 7 \\ \hline \end{array} \qquad \begin{array}{r} 1 \\ \bullet 8 \\ 5 \\ +\ 1 \\ \hline \end{array}$$

TIME:

C.

$$\begin{array}{r} \bullet 8 \\ 5 \\ 5 \\ +\ 6 \\ \hline \end{array} \qquad \begin{array}{r} 2 \\ \bullet 8 \\ \bullet 8 \\ +\ 7 \\ \hline \end{array}$$

TIME:

D.

$$\begin{array}{r} 5 \\ 5 \\ \bullet 8 \\ +\ 1 \\ \hline \end{array} \qquad \begin{array}{r} \bullet 8 \\ 7 \\ 6 \\ +\bullet 8 \\ \hline \end{array}$$

TIME:

Press Five

AND 3 MORE when number 8 is marked• Pupil will say: "Five—Six—Seven—Eight"

IN CLASS

A.

4	1
•8	3
•8	•8
+•8	+•8

B.

2	3
2	1
•8	•8
+ 3	+ 5

C.

3	1
•8	2
•8	•8
+ 7	+•8

D.

2	1
1	1
•8	•8
+•8	+ 5

Name _____

DO AT HOME

6	7
5	6
•8	7
+ 5	+•8

•8	1
7	•8
7	4
+•8	+•8

•8	1
4	3
•8	•8
+ 5	+•8

3	5
6	7
1	•8
+•8	+•8

DO AT HOME

2 7 5 + •8	3 6 5 + •8
3 •8 •8 + 7	3 •8 5 + 7
2 •8 2 + •8	2 •8 •8 + 4
•8 1 7 + 5	•8 1 5 + •8

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CLASS SPEED COMPETITION

A.

4 •8 2 + •8	3 6 1 + •8

TIME:

B.

2 2 •8 + •8	4 1 5 + •8

TIME:

C.

7 7 •8 + •8	1 4 7 + •8

TIME:

D.

1 7 5 + •8	•8 1 1 + •8

TIME:

Press 5—Exchange

AND 3 MORE when number 8 is marked• Pupil will say: "Exchange Five-Six-Seven-Eight"

IN CLASS

A.

5	6
•8	•8
5	8
+•8	+ 8

B

7	8
•8	•8
•8	•8
+ 2	+ 1

C.

5	3
•8	8
8	8
+ 8	+•8

D.

2	1
8	8
8	•8
+•8	+ 5

Name _____

DO AT HOME

2	1
6	7
•8	•8
+•8	+ 3

4	5
5	•8
7	5
+•8	+ 7

6	3
•8	4
1	•8
+•8	+ 5

4	2
4	8
•8	5
+ 4	+•8

DO AT HOME

7 •8 •8 + 6	8 •8 •8 + 8
6 •8 8 + 6	5 •8 6 +•8
4 8 6 +•8	3 8 7 +•8
2 8 7 +•8	1 8 •8 +•8

CLASS SPEED COMPETITION

A.

7 8 •8 + 8	2 4 •8 + 6

TIME:

B.

8 •8 2 +•8	7 •8 •8 + 7

TIME:

C.

4 5 6 +•8	6 •8 3 +•8

TIME:

D.

8 7 •8 + 2	4 2 •8 + 3

TIME:

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Press 5—Exchange

AND 3 MORE when number 8 is marked• Pupil will say: "Exchange Five-Six-Seven-Eight"

IN CLASS

A.

2	3
7	6
•8	•8
+•8	+ 6

B.

1	5
8	4
•8	•8
+ 3	+ 7

C.

4	4
1	5
4	•8
+•8	+•8

D.

4	4
6	7
7	8
+•8	+•8

Name _____

DO AT HOME

4	6
2	•8
•8	1
+ 7	+ 5

7	5
7	•8
5	5
+•8	+•8

6	8
4	5
8	5
+•8	+•8

4	7
5	•8
6	5
+•8	+ 1

DO AT HOME

4 3 •8 + 5	8 7 •8 + 5
6 1 •8 +•8	5 •8 5 +•8
8 6 1 +•8	8 7 •8 + 5
4 1 •8 + 2	2 1 2 +•8

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CLASS SPEED COMPETITION

A.

2 7 •8 + 6	4 1 4 +•8

TIME:

B.

6 3 •8 + 3	6 7 4 +•8

TIME:

C.

7 5 7 +•8	3 5 •8 +•8

TIME:

D.

1 1 7 +•8	3 2 •8 + 1

TIME:

Press Five

AND 4 MORE when number **9** is marked• Pupil will say: "Five-Six-Seven-Eight-Nine"

IN CLASS

A.

7	8
5	6
•9	7
+•9	+•9

B.

5	4
7	8
1	•9
+•9	+•9

C.

5	6
8	8
•9	•9
+•9	+ 5

D.

4	5
1	4
6	1
+•9	+•9

Name _____

DO AT HOME

•9	2
1	•9
5	•9
+ 8	+•9

•9	•9
4	3
5	•9
+ 8	+•9

•9	•9
5	6
8	5
+•9	+•9

•9	•9
7	8
7	4
+•9	+•9

DO AT HOME

8 5 •9 +•9	•9 5 •9 +•9
5 5 4 +•9	2 1 1 +•9
•9 8 6 +•9	•9 7 8 +•9
2 •9 2 +•9	3 6 5 +•9

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CLASS SPEED COMPETITION

A.

7 5 •9 +•9	1 1 2 +•9

TIME:

B.

6 7 •9 + 7	•9 1 5 + 4

TIME:

C.

1 1 1 +•9	2 •9 3 +•9

TIME:

D.

3 4 6 +•9	5 8 •9 + 8

TIME:

Press Five

AND 4 MORE when number **9** is marked• Pupil will say: "Five-Six-Seven-Eight-Nine"

IN CLASS

A.

4	3
•9	1
1	•9
+•9	+ 8

B.

2	1
2	3
•9	•9
+•9	+ 6

C.

3	2
•9	•9
•9	8
+ 1	+ 1

D.

1	2
•9	1
•9	•9
+ 1	+•9

Name _____

DO AT HOME

•9	•9
3	1
•9	8
+ 1	+ 7

4	1
•9	•9
•9	•9
+ 8	+ 5

4	4
•9	8
5	2
+ 8	+•9

4	4
7	6
•9	•9
+ 8	+ 6

DO AT HOME

1 •9 3 +•9	2 •9 3 +•9
2 •9 •9 +•9	4 •9 •9 + 8
2 2 •9 +•9	1 2 •9 + 5
3 •9 8 +•9	2 1 •9 +•9

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CLASS SPEED COMPETITION

A.

•9 1 •9 + 6	•9 4 1 +•9

TIME:

B.

•9 3 2 +•9	•9 2 •9 + 8

TIME:

C.

4 •9 1 +•9	4 6 1 +•9

TIME:

D.

3 •9 •9 +•9	2 •9 •9 + 5

TIME:

Press 5—Exchange

AND 4 MORE when number **9** is marked• Pupil will say:
"Exchange Five-Six-Seven-Eight-Nine"

IN CLASS

A.

6	7
•9	•9
•9	•9
+ 9	+ 5

B.

4	5
9	1
5	•9
+•9	+•9

C.

8	3
•9	9
•9	5
+•9	+•9

D.

2	4
9	4
5	•9
+•9	+ 8

Name _____

DO AT HOME

7	8
•9	•9
•9	•9
+•9	+ 5

5	6
•9	•9
5	4
+ 1	+ 4

4	4
9	3
6	•9
+•9	+ 5

1	4
1	1
3	•9
+•9	+ 9

DO AT HOME

3 9 5 + •9	4 9 6 + •9
3 8 7 + •9	4 6 9 + •9
4 1 •9 + 9	3 1 1 + •9
4 2 •9 + 8	3 1 2 + •9

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CLASS SPEED COMPETITION

A.

5 •9 9 + 1	6 •9 5 + 5

TIME:

B.

7 •9 6 + 7	8 •9 7 + 5

TIME:

C.

9 1 8 + •9	4 9 4 + •9

TIME:

D.

2 8 8 + •9	9 4 5 + •9

TIME:

Press 5—Exchange

AND 4 MORE when number **9** is marked• Pupil will say:
"Exchange Five-Six-Seven-Eight-Nine"

IN CLASS

A.

9	9
•9	8
•9	•9
+•9	+ 5

B.

9	9
7	6
•9	•9
+ 7	+ 9

C.

9	9
1	2
9	8
+•9	+•9

D.

9	9
3	5
7	1
+•9	+•9

Name _____

DO AT HOME

9	9
•9	6
5	4
+ 9	+•9

9	9
6	7
•9	3
+ 1	+•9

9	9
1	5
7	5
+•9	+•9

2	5
2	5
1	9
+•9	+•9

DO AT HOME

1	4
9	5
9	•9
+•9	+ 8
3	8
2	•9
•9	5
+ 8	+ 7
3	5
9	5
5	9
+•9	+•9
3	4
8	7
8	5
+•9	+•9

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CLASS SPEED COMPETITION

A.

9	9
•9	•9
•9	1
+ 8	+•9

TIME:

B.

7	8
3	2
9	9
+•9	+•9

TIME:

C.

5	6
4	7
•9	5
+ 6	+•9

TIME:

D.

3	5
6	5
7	8
+•9	+•9

TIME:

Transfer
Carry-Over Number
directly from
Left Hand to Right Hand

IN CLASS

A.

51	45
62	66
73	28
+84	+35

B.

24	25
16	95
99	15
+16	+15

C.

18	60
63	18
57	72
+39	+55

D.

99	21
46	34
13	57
+75	+19

Name _____

DO AT HOME

68	75
25	21
40	69
+63	+31

26	47
93	59
10	38
+44	+65

45	21
67	55
83	75
+10	+46

27	36
88	98
63	51
+55	+50

DO AT HOME

18 95 47 + 32	70 98 36 + 57
73 45 19 + 62	46 57 82 + 10
94 56 37 + 28	16 90 72 + 38
56 78 91 + 23	47 30 29 + 18

CLASS SPEED COMPETITION

A.

29 16 95 + 68	42 87 85 + 56

TIME:

B.

33 61 94 + 65	81 56 92 + 71

TIME:

C.

36 10 98 + 55	57 35 56 + 48

TIME:

D.

92 46 75 + 18	12 40 70 + 51

TIME:

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Transfer
Carry-Over Number
Directly from
Left Hand to Right Hand

IN CLASS

A.

91	42
62	11
43	44
+63	+10

B.

82	41
72	50
64	74
+41	+42

C.

56	44
93	66
18	78
+55	+15

D.

37	63
21	78
98	20
+54	+51

Name _____

DO AT HOME

57	72
41	81
50	92
+61	+10

36	51
51	94
41	61
+51	+95

32	96
18	18
60	65
+54	+24

99	88
99	88
99	88
+99	+88

DO AT HOME

76	18
92	18
46	92
+51	+65

37	44
27	56
93	20
+15	+98

66	86
72	75
59	49
+34	+90

67	94
21	48
42	52
+78	+36

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CLASS SPEED COMPETITION

A.

54	13
60	23
71	40
+80	+33

TIME:

B.

42	41
52	11
62	92
+73	+11

TIME:

C.

29	65
68	21
75	36
+64	+93

TIME:

D.

75	39
36	48
95	55
+16	+16

TIME:

Transfer
Carry-Over Number
Directly From
Left Hand to Right Hand

IN CLASS

A.

12	14
22	43
26	12
+15	+18

B.

19	14
26	16
24	29
+25	+18

C.

12	49
17	60
21	15
+71	+53

D.

27	70
86	37
93	15
+55	+67

Name _____

DO AT HOME

31	12
12	24
39	17
+14	+37

26	17
23	36
16	29
+15	+13

67	15
38	76
50	54
+46	+67

29	16
67	93
56	15
+75	+54

DO AT HOME

26	67
32	85
47	30
+ 30	+ 77

85	38
37	73
21	16
+ 56	+ 45

78	27
69	78
50	12
+ 42	+ 55

78	12
60	27
35	31
+ 22	+ 69

CLASS SPEED COMPETITION

A.

12	24
17	35
18	14
+ 16	+ 15

TIME:

B.

29	17
18	27
26	17
+ 24	+ 28

TIME:

C.

67	31
35	69
56	75
+ 63	+ 24

TIME:

D.

73	29
21	67
68	55
+ 53	+ 65

TIME:

Transfer
Carry-Over Number
Directly From
Left Hand to Right Hand

IN CLASS

A.

943	757
720	206
672	713
+513	+909

B.

698	337
727	456
865	912
+521	+885

C.

675	708
200	123
912	497
+345	+185

D.

278	196
625	273
810	605
+430	+350

Name _____

DO AT HOME

477	693
219	785
568	155
+730	+402

375	493
676	756
399	309
+678	+218

105	726
674	937
258	155
+937	+407

260	786
673	927
891	530
+354	+169

DO AT HOME

129	265
967	478
830	903
+ 885	+ 112

750	673
627	426
894	900
+ 315	+ 128

782	527
197	607
623	856
+ 405	+ 310

386	171
954	401
275	689
+ 101	+ 523

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CLASS SPEED COMPETITION

A.

706	833
123	721
654	546
+ 209	+ 954

TIME:

B.

727	965
958	432
693	788
+ 186	+ 105

TIME:

C.

737	345
218	678
905	106
+ 456	+ 229

D.

567	426
309	735
415	265
+ 916	+ 897

TIME:

Transfer
Carry-Over Number
Directly From
Left Hand to Right Hand

IN CLASS

A.

215	693
963	254
716	108
+ 108	+ 755

B.

928	436
673	777
207	555
+ 726	+ 128

C.

108	259
692	670
436	158
+ 758	+ 643

D.

218	526
864	934
305	180
+ 927	+ 570

Name _____

DO AT HOME

706	326
437	458
608	981
+ 129	+ 705

955	278
143	106
309	694
+ 278	+ 352

126	967
937	305
504	436
+ 875	+ 128

154	185
461	432
578	276
+ 920	+ 690

DO AT HOME

717	215
869	609
243	438
+ 506	+ 670

298	469
875	158
346	706
+ 103	+ 321

546	344
783	216
199	507
+ 580	+ 893

906	726
785	113
193	698
+ 204	+ 505

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CLASS SPEED COMPETITION

A.

961	128
123	900
784	534
+ 578	+ 670

TIME:

B.

275	876
342	504
901	321
+ 568	+ 685

TIME:

C.

736	315
128	986
509	724
+ 674	+ 650

TIME:

D.

126	954
684	770
297	812
+ 350	+ 356

TIME:

Transfer
Carry-Over Number
Directly From
Left Hand to Right Hand

IN CLASS

A.

714	671
216	294
825	350
+ 309	+ 163

B.

164	121
291	420
170	116
+ 151	+ 223

C.

609	328
743	694
557	315
+ 895	+ 786

D.

675	727
642	386
753	943
+ 496	+ 186

Name _____

DO AT HOME

180	216
642	924
708	300
+ 667	+ 210

702	215
405	118
101	305
+ 401	+ 145

349	746
469	656
565	257
+ 101	+ 415

296	216
467	938
556	155
+ 111	+ 276

DO AT HOME

293	181
185	932
148	650
+ 257	+ 476

607	793
215	206
428	655
+ 931	+ 432

186	437
943	285
727	623
+ 555	+ 401

693	618
216	707
850	635
+ 107	+ 219

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CLASS SPEED COMPETITION

A.

269	967
156	853
364	124
+ 278	+ 430

TIME:

B.

628	216
105	926
493	555
+ 172	+ 389

TIME:

C.

123	348
456	726
999	939
+ 555	+ 167

TIME:

D.

963	269
900	726
491	358
+ 314	+ 642

TIME:

Transfer
Carry-Over Number
Directly From
Left Hand to Right Hand

IN CLASS

A.

4,296	2,075
8,035	4,936
1,479	7,543
+ 2,045	+ 1,868
15,855	16,422

B.

2,184	6,783
3,925	1,507
5,010	2,249
+ 9,576	+ 5,734
20,695	

C.

6,923	2,786
6,756	9,504
1,575	3,725
+ 3,116	+ 6,117

D.

1,428	2,693
6,943	4,975
1,527	1,552
+ 8,064	+ 1,676

Name _____

DO AT HOME

3,344	4,607
6,677	2,185
1,122	6,921
+ 5,500	+ 3,345

8,810	5,225
4,056	4,864
5,769	1,795
+ 1,234	+ 5,251

6,708	3,978
1,349	1,067
5,110	2,243
+ 4,825	+ 3,557

4,627	1,867
6,756	7,168
1,075	5,057
+ 8,758	+ 4,263

DO AT HOME

2,956	6,946
4,035	5,015
1,876	3,897
+ 7,630	+ 4,220

1,594	7,018
4,205	6,945
5,136	5,023
+ 7,857	+ 3,125

9,248	3,736
6,927	4,857
1,035	9,045
+ 5,261	+ 1,522

5,678	1,596
9,036	7,038
1,425	6,745
+ 6,544	+ 5,251

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CLASS SPEED COMPETITION

A.

2,854	1,801
1,693	2,648
7,501	9,557
+ 5,568	+ 4,332

TIME:

B.

9,669	7,008
1,805	4,927
5,212	8,516
+ 3,773	+ 2,436

TIME:

C.

2,768	2,963
9,315	4,673
6,056	1,516
+ 1,234	+ 6,028

TIME:

D.

6,758	7,268
6,530	4,956
1,246	5,018
+ 6,758	+ 6,157

TIME:

Transfer
Carry-Over Number
Directly From
Left Hand to Right Hand

IN CLASS

A.

2,196	1,269
4,023	4,015
1,861	4,788
+ 1,071	+ 1,003

B.

1,867	2,698
4,120	4,165
5,001	3,011
+ 3,120	+ 7,031

C.

6,923	7,698
4,675	6,943
1,006	7,515
+ 5,786	+ 5,515

D.

2,706	8,674
9,415	1,569
1,502	4,736
+ 3,368	+ 5,695

Name _____

DO AT HOME

1,864	7,010
9,806	4,810
7,152	6,523
+ 3,629	+ 4,956

2,168	9,494
9,205	5,036
5,243	7,314
+ 1,107	+ 8,599

6,751	7,568
9,101	1,273
4,162	9,012
+ 5,303	+ 4,255

7,306	1,369
6,815	4,873
7,436	5,050
+ 6,707	+ 7,615

DO AT HOME

A.

2,978	2,763
1,346	4,275
5,023	6,034
+8,915	+1,985

B.

6,725	3,726
2,310	4,550
8,539	7,867
+9,874	+1,689

C.

9,406	2,156
7,085	9,037
5,213	8,818
+2,563	+5,204

D.

6,725	9,867
4,678	2,013
1,023	4,705
+5,906	+5,998

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CLASS SPEED COMPETITION

A.

2,004	2,509
3,436	5,326
1,711	7,062
+2,695	+8,014

TIME:

B.

1,125	2,604
9,425	1,875
6,365	4,933
+2,178	+7,527

TIME:

C.

7,346	7,326
9,705	9,437
6,843	3,068
+5,125	+4,975

TIME:

D.

1,370	4,268
6,768	7,513
1,534	6,737
+2,856	+5,068

TIME:

Algebra Addition

IN CLASS

A.

$6 + 5 + \square = 15$

$7 + \square + 9 = 20$

$\square + 11 + 4 = 21$

$15 + \square + 7 = 30$

$12 + 6 + \square = 25$

B.

$6 + \square + 1 = 8$

$22 + 8 + \square = 39$

$\square + 27 + 7 = 35$

$\square + 21 + 4 = 30$

$19 + \square + 9 = 37$

C.

$9 + \square + 9 = 27$

$8 + 8 + \square = 24$

$\square + 7 + 7 = 21$

$6 + 6 + \square = 18$

D.

$1 + 2 + \square = 11$

$2 + \square + 4 = 11$

$\square + 3 + 4 = 11$

$4 + 5 + \square = 15$

Name _____

DO AT HOME

$14 + \square + 6 = 30$

$9 + 8 + \square = 27$

$\square + 3 + 19 = 29$

$5 + \square + 17 = 31$

$\square + 6 + 9 = 21$

$16 + 16 + \square = 40$

$18 + \square + 18 = 45$

$\square + 3 + 3 = 9$

$1 + \square + 5 = 9$

$\square + 4 + 6 = 12$

$4 + \square + 8 = 18$

$7 + 9 + \square = 27$

$1 + 1 + \square = 3$

$6 + \square + 8 = 23$

$\square + 7 + 1 = 16$

$4 + 16 + \square = 30$

DO AT HOME

$10 + 10 + \square = 40$

$5 + \square + 5 = 15$

$\square + 4 + 4 = 12$

$3 + \square + 3 = 9$

$17 + 9 + \square = 33$

$15 + \square + 7 = 30$

$\square + 14 + 7 = 25$

$5 + 10 + \square = 22$

$1 + 2 + \square = 12$

$8 + 12 + \square = 30$

$6 + \square + 6 = 21$

$14 + \square + 9 = 31$

$22 + 6 + \square = 40$

$25 + 9 + \square = 40$

$\square + 7 + 13 = 30$

$\square + 18 + 8 = 34$

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CLASS SPEED COMPETITION

A.

$22 + 22 + \square = 50$

$15 + 16 + \square = 48$

$10 + 11 + \square = 33$

$12 + 13 + \square = 39$

TIME:

B.

$18 + \square + 5 = 30$

$9 + \square + 16 = 32$

$5 + \square + 5 = 15$

$20 + \square + 10 = 40$

TIME:

C.

$\square + 10 + 10 = 30$

$\square + 20 + 15 = 40$

$\square + 30 + 10 = 50$

$\square + 25 + 20 = 50$

TIME:

D.

$16 + 17 + \square = 43$

$9 + \square + 10 = 29$

$\square + 9 + 20 = 30$

$13 + 7 + \square = 35$

Algebra Addition
(Optional)

IN CLASS

A.

8 6	0 7
5 3	2 9
+ 2 4	+ 4 9
1 6 8	8 4

B.

□ □	4 6
2 6	□ □
+ 9 8	+ 5 3
2 1 9	1 4 9

C.

5 3	□ 6
1 8	7 □
+ □ □	+ 5 6
1 2 0	1 4 8

D.

5 7	3 □
1 □	□ 3
+ □ 3	+ 2 6
1 4 3	1 4 7

Name _____

DO AT HOME

2 6	□ 6
□ 1	3 □
+ 6 □	+ 5 6
1 4 2	1 1 6

□ □	3 6
4 9	□ □
+ 5 1	+ 7 8
1 2 0	1 3 9

2 8	□ 0
3 9	7 □
+ □ □	+ 2 3
1 3 4	1 0 3

4 6	7 □
2 □	□ 8
+ □ 3	+ 4 3
1 5 8	1 5 1

DO AT HOME

5 5 □ 7 + 3 □ 1 6 6	□ 9 3 □ + 7 3 1 8 5
□ □ 5 6 + 3 4 1 1 0	3 0 □ □ + 7 8 1 4 8
6 1 3 7 + □ □ 1 5 7	□ 9 7 □ + 9 9 2 2 3
9 8 4 □ + □ 5 2 7 0	5 □ □ 3 + 1 2 9 8

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CLASS SPEED COMPETITION

A.

2 1 □ 5 + 6 □ 1 3 0	□ 2 6 □ + 7 0 1 9 2

TIME:

B.

□ □ 5 3 + 1 8 8 0	2 9 □ □ + 5 3 1 1 2

TIME:

C.

1 2 6 5 + □ □ 1 4 9	□ 3 9 □ + 6 5 2 2 0

TIME:

D.

3 4 6 □ + □ 8 1 9 1	4 □ □ 4 + 5 7 1 4 5

TIME:

Multiplication Chart

(Teacher's Manual Page 76)

Number: 0

(Note: Although the Multiplication Chart for Zero is outlined below, it is sufficient for pupils to understand that Any Number Times Zero, or Zero Times Any Number, results in zero)

Problem	Unit	Manipulation	Pupil Counts How Many Times	Fingers Read
0 × 0	——	——	"ZERO"	0
1 × 0	0	——	"ONE"	0
2 × 0	0	——	"TWO"	0
3 × 0	0	——	"THREE"	0
4 × 0	0	——	"FOUR"	0
5 × 0	0	——	"FIVE"	0
6 × 0	0	——	"SIX"	0
7 × 0	0	——	"SEVEN"	0
8 × 0	0	——	"EIGHT"	0
9 × 0	0	——	"NINE"	0
10 × 0	+ 0	——	"TEN"	0
	Total: 0			

Number: 1

Problem	Unit	Manipulation	Pupil Counts How Many Times	Fingers Read
0 × 1	——	——	"ZERO"	0
1 × 1	1	PRESS 1	"ONE"	1
2 × 1	+ 1	PRESS 1	"TWO"	2
3 × 1	+ 1	PRESS 1	"THREE"	3
4 × 1	+ 1	PRESS 1	"FOUR"	4
*5 × 1	+ 1	PRESS 5 & CLEAR 4	"FIVE"	5
6 × 1	+ 1	PRESS 1	"SIX"	6
7 × 1	+ 1	PRESS 1	"SEVEN"	7
8 × 1	+ 1	PRESS 1	"EIGHT"	8
9 × 1	+ 1	PRESS 1	"NINE"	9
10 × 1	+ 1	PRESS 10 & CLEAR 9	"TEN"	10
	Total: 10			

***At the outset, Unit by Unit (Stage 1) manipulation will simplify this transition.**

After completing reverse side of this page, instruct pupil to fold along perforation to protect chart for future use. It is suggested that a strip of cellophane tape be run along the perforation.

NOTE: A Multiplication Time Progress Chart appears on page 105. Use this chart to log pupil's progress with each multiplication manipulation on this page and on succeeding pages.

Multiplication of 0 and 1

IN CLASS

A.

$2 \times 1 =$	$4 \times 0 =$
$9 \times 0 =$	$3 \times 1 =$
$8 \times 1 =$	$1 \times 0 =$
$0 \times 0 =$	$5 \times 1 =$
$6 \times 1 =$	$7 \times 0 =$

B.

$2 \times 0 =$	$4 \times 1 =$
$9 \times 1 =$	$3 \times 0 =$
$8 \times 0 =$	$1 \times 1 =$
$0 \times 1 =$	$5 \times 0 =$
$6 \times 0 =$	$7 \times 1 =$

C.

$1 \times 1 =$	$7 \times 0 =$
$6 \times 0 =$	$2 \times 1 =$
$4 \times 1 =$	$5 \times 0 =$
$8 \times 0 =$	$9 \times 1 =$
$3 \times 1 =$	$0 \times 0 =$

D.

$1 \times 0 =$	$7 \times 1 =$
$6 \times 1 =$	$2 \times 0 =$
$4 \times 0 =$	$5 \times 1 =$
$8 \times 1 =$	$9 \times 0 =$
$3 \times 0 =$	$0 \times 1 =$

IN CLASS

E.

$9 \times 0 =$	$4 \times 1 =$
$8 \times 1 =$	$3 \times 0 =$
$7 \times 0 =$	$2 \times 1 =$
$6 \times 1 =$	$1 \times 0 =$
$5 \times 0 =$	$0 \times 1 =$

F.

$9 \times 1 =$	$4 \times 0 =$
$8 \times 0 =$	$3 \times 1 =$
$7 \times 1 =$	$2 \times 0 =$
$6 \times 0 =$	$1 \times 1 =$
$5 \times 1 =$	$0 \times 0 =$

G.

$4 \times 1 =$	$9 \times 0 =$
$6 \times 0 =$	$1 \times 1 =$
$3 \times 1 =$	$7 \times 0 =$
$0 \times 0 =$	$2 \times 1 =$
$8 \times 1 =$	$5 \times 0 =$

H.

$4 \times 0 =$	$9 \times 1 =$
$6 \times 1 =$	$1 \times 0 =$
$3 \times 0 =$	$7 \times 1 =$
$0 \times 1 =$	$2 \times 0 =$
$8 \times 0 =$	$5 \times 1 =$

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More Multiplication of 0 and 1

IN CLASS

A.

$1 \times 0 =$	$5 \times 1 =$
$8 \times 1 =$	$9 \times 0 =$
$2 \times 0 =$	$0 \times 1 =$
$6 \times 1 =$	$7 \times 0 =$

B.

$1 \times 1 =$	$5 \times 0 =$
$8 \times 0 =$	$9 \times 1 =$
$2 \times 1 =$	$0 \times 0 =$
$6 \times 0 =$	$7 \times 1 =$

C.

$6 \times 1 =$	$1 \times 0 =$
$9 \times 0 =$	$5 \times 1 =$
$4 \times 1 =$	$2 \times 0 =$
$0 \times 0 =$	$7 \times 1 =$

D.

$6 \times 0 =$	$1 \times 1 =$
$9 \times 1 =$	$5 \times 0 =$
$4 \times 0 =$	$2 \times 1 =$
$0 \times 1 =$	$7 \times 0 =$

Name _____

DO AT HOME

$3 \times 1 =$	$4 \times 0 =$
$2 \times 0 =$	$5 \times 1 =$
$6 \times 1 =$	$8 \times 0 =$
$9 \times 0 =$	$7 \times 1 =$
$3 \times 0 =$	$4 \times 1 =$
$2 \times 1 =$	$5 \times 0 =$
$6 \times 0 =$	$8 \times 1 =$
$9 \times 1 =$	$7 \times 0 =$
$2 \times 1 =$	$4 \times 0 =$
$5 \times 0 =$	$0 \times 1 =$
$1 \times 1 =$	$8 \times 0 =$
$9 \times 0 =$	$7 \times 1 =$
$2 \times 0 =$	$4 \times 1 =$
$5 \times 1 =$	$0 \times 0 =$
$1 \times 0 =$	$8 \times 1 =$
$9 \times 1 =$	$7 \times 0 =$

DO AT HOME

$4 \times 0 =$	$6 \times 1 =$
$8 \times 1 =$	$5 \times 0 =$
$2 = 0 =$	$7 \times 1 =$
$1 \times 1 =$	$3 \times 0 =$
$0 \times 0 =$	$9 \times 1 =$
$4 \times 1 =$	$6 \times 0 =$
$8 \times 0 =$	$5 \times 1 =$
$2 \times 1 =$	$7 \times 0 =$
$1 \times 0 =$	$3 \times 1 =$
$0 \times 1 =$	$9 \times 0 =$
$5 \times 0 =$	$1 \times 1 =$
$9 \times 1 =$	$0 \times 0 =$
$6 \times 0 =$	$2 \times 1 =$
$8 \times 1 =$	$4 \times 0 =$
$7 \times 0 =$	$3 \times 1 =$
$5 \times 1 =$	$1 \times 0 =$
$9 \times 0 =$	$0 \times 1 =$
$6 \times 1 =$	$2 \times 0 =$
$8 \times 0 =$	$4 \times 1 =$
$7 \times 1 =$	$3 \times 0 =$

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CLASS SPEED COMPETITION

A.

$5 \times 0 =$	$7 \times 1 =$
$1 \times 1 =$	$4 \times 0 =$
$0 \times 0 =$	$5 \times 1 =$
$8 \times 1 =$	$3 \times 0 =$
$9 \times 0 =$	$2 \times 1 =$

TIME:

B.

$5 \times 1 =$	$7 \times 0 =$
$1 \times 0 =$	$4 \times 1 =$
$0 \times 1 =$	$5 \times 0 =$
$8 \times 0 =$	$3 \times 1 =$
$9 \times 1 =$	$2 \times 0 =$

TIME:

C.

$6 \times 0 =$	$3 \times 1 =$
$1 \times 1 =$	$7 \times 0 =$
$5 \times 0 =$	$9 \times 1 =$
$8 \times 1 =$	$0 \times 0 =$
$4 \times 0 =$	$2 \times 1 =$

TIME:

D.

$6 \times 1 =$	$3 \times 0 =$
$1 \times 0 =$	$7 \times 1 =$
$5 \times 1 =$	$9 \times 0 =$
$8 \times 0 =$	$0 \times 1 =$
$4 \times 1 =$	$2 \times 0 =$

TIME:

And More Multiplication of 0 and 1

IN CLASS

A.

$9 \times 1 =$	$2 \times 0 =$
$8 \times 0 =$	$7 \times 1 =$
$4 \times 1 =$	$6 \times 0 =$
$0 \times 0 =$	$3 \times 1 =$

B.

$9 \times 0 =$	$2 \times 1 =$
$8 \times 1 =$	$7 \times 0 =$
$4 \times 0 =$	$6 \times 1 =$
$0 \times 1 =$	$3 \times 0 =$

C.

$3 \times 0 =$	$2 \times 1 =$
$1 \times 1 =$	$7 \times 0 =$
$9 \times 0 =$	$6 \times 1 =$
$4 \times 1 =$	$8 \times 0 =$

D.

$3 \times 1 =$	$2 \times 0 =$
$1 \times 0 =$	$7 \times 1 =$
$9 \times 1 =$	$6 \times 0 =$
$4 \times 0 =$	$8 \times 1 =$

Name _____

DO AT HOME

$9 \times 0 =$	$8 \times 1 =$
$7 \times 1 =$	$6 \times 0 =$
$5 \times 0 =$	$4 \times 1 =$
$3 \times 1 =$	$2 \times 0 =$

$9 \times 1 =$	$8 \times 0 =$
$7 \times 0 =$	$6 \times 1 =$
$5 \times 1 =$	$4 \times 0 =$
$3 \times 0 =$	$2 \times 1 =$

$1 \times 1 =$	$5 \times 0 =$
$9 \times 0 =$	$4 \times 1 =$
$6 \times 1 =$	$3 \times 0 =$
$8 \times 0 =$	$7 \times 1 =$

$1 \times 1 =$	$5 \times 0 =$
$9 \times 0 =$	$4 \times 1 =$
$6 \times 1 =$	$3 \times 0 =$
$8 \times 0 =$	$7 \times 1 =$

DO AT HOME

$1 \times 1 =$	$4 \times 0 =$
$9 \times 0 =$	$5 \times 1 =$
$2 \times 1 =$	$0 \times 0 =$
$3 \times 0 =$	$8 \times 1 =$
$6 \times 1 =$	$7 \times 0 =$
$1 \times 0 =$	$4 \times 1 =$
$9 \times 1 =$	$5 \times 0 =$
$2 \times 0 =$	$0 \times 1 =$
$3 \times 1 =$	$8 \times 0 =$
$6 \times 0 =$	$7 \times 1 =$
$1 \times 1 =$	$0 \times 0 =$
$4 \times 0 =$	$3 \times 1 =$
$9 \times 1 =$	$6 \times 0 =$
$5 \times 0 =$	$8 \times 1 =$
$2 \times 1 =$	$7 \times 0 =$
$1 \times 0 =$	$0 \times 1 =$
$4 \times 1 =$	$3 \times 0 =$
$9 \times 0 =$	$6 \times 1 =$
$5 \times 1 =$	$8 \times 0 =$
$2 \times 0 =$	$7 \times 1 =$

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CLASS SPEED COMPETITION

A.

$5 \times 1 =$	$1 \times 0 =$
$0 \times 0 =$	$4 \times 1 =$
$2 \times 1 =$	$6 \times 0 =$
$8 \times 0 =$	$7 \times 1 =$
$3 \times 1 =$	$9 \times 0 =$

TIME:

B.

$5 \times 0 =$	$1 \times 1 =$
$0 \times 1 =$	$4 \times 0 =$
$2 \times 0 =$	$6 \times 1 =$
$8 \times 1 =$	$7 \times 0 =$
$3 \times 0 =$	$9 \times 1 =$

TIME:

C.

$2 \times 1 =$	$1 \times 0 =$
$4 \times 0 =$	$5 \times 1 =$
$8 \times 1 =$	$0 \times 0 =$
$6 \times 0 =$	$9 \times 1 =$
$3 \times 1 =$	$7 \times 0 =$

TIME:

D.

$2 \times 0 =$	$1 \times 1 =$
$4 \times 1 =$	$5 \times 0 =$
$8 \times 0 =$	$0 \times 1 =$
$6 \times 1 =$	$9 \times 0 =$
$3 \times 0 =$	$7 \times 1 =$

TIME:

Multiplication Chart

Number: 5

Problem	Unit	Manipulation	Pupil Counts How Many Times	Fingers Read
0 × 5	——	——	"ZERO"	0
1 × 5	5	PRESS 5	"ONE"	5
2 × 5	+5	PRESS 10 & CLEAR 5	"TWO"	10
3 × 5	+5	PRESS 5	"THREE"	15
4 × 5	+5	PRESS 10 & CLEAR 5	"FOUR"	20
5 × 5	+5	PRESS 5	"FIVE"	25
6 × 5	+5	PRESS 10 & CLEAR 5	"SIX"	30
7 × 5	+5	PRESS 5	"SEVEN"	35
8 × 5	+5	PRESS 10 & CLEAR 5	"EIGHT"	40
9 × 5	+5	PRESS 5	"NINE"	45
10 × 5	+5	BIG EXCHANGE: SIMULTANEOUSLY Left Hand—Press 50 & Clear 40 Right Hand—Clear 5	"TEN"	50
	Total: 50			

Number: 9

Problem	Unit	Manipulation	Pupil Counts How Many Times	Fingers Read
0 × 9	——	——	"ZERO"	0
1 × 9	9	PRESS 9	"ONE"	9
2 × 9	+9	PRESS 10 & CLEAR 1	"TWO"	18
3 × 9	+9	PRESS 10 & CLEAR 1	"THREE"	27
4 × 9	+9	PRESS 10 & CLEAR 1	"FOUR"	36
5 × 9	+9	PRESS 10 & CLEAR 1	"FIVE"	45
6 × 9	+9	BIG EXCHANGE + 4 Left Hand—Press 50 & Clear 40 Right Hand—Clear 5 then Press 4	"SIX"	54
7 × 9	+9	PRESS 10 & CLEAR 1	"SEVEN"	63
8 × 9	+9	PRESS 10 & CLEAR 1	"EIGHT"	72
9 × 9	+9	PRESS 10 & CLEAR 1	"NINE"	81
10 × 9	+9	PRESS 10 & CLEAR 1	"TEN"	90
	Total: 90			

After completing reverse side of this page, instruct pupil to fold along perforation to protect chart for future use. It is suggested that a strip of cellophane tape be run along the perforation.

Multiplication of 5 and 9

IN CLASS

A.

$8 \times 9 =$	$9 \times 5 =$
$7 \times 5 =$	$5 \times 9 =$
$3 \times 9 =$	$2 \times 5 =$
$0 \times 5 =$	$6 \times 9 =$
$1 \times 9 =$	$4 \times 5 =$

B.

$8 \times 5 =$	$9 \times 9 =$
$7 \times 9 =$	$5 \times 5 =$
$3 \times 5 =$	$2 \times 9 =$
$0 \times 9 =$	$6 \times 5 =$
$1 \times 5 =$	$4 \times 9 =$

C.

$3 \times 9 =$	$2 \times 5 =$
$9 \times 5 =$	$8 \times 9 =$
$6 \times 9 =$	$5 \times 5 =$
$1 \times 5 =$	$4 \times 9 =$
$0 \times 9 =$	$7 \times 5 =$

D.

$3 \times 5 =$	$2 \times 9 =$
$9 \times 9 =$	$8 \times 5 =$
$6 \times 5 =$	$5 \times 9 =$
$1 \times 9 =$	$4 \times 5 =$
$0 \times 5 =$	$7 \times 9 =$

IN CLASS

E.

$1 \times 9 =$	$4 \times 5 =$
$2 \times 5 =$	$9 \times 9 =$
$7 \times 9 =$	$5 \times 5 =$
$8 \times 5 =$	$0 \times 9 =$
$3 \times 9 =$	$6 \times 5 =$

F.

$1 \times 5 =$	$4 \times 9 =$
$2 \times 9 =$	$9 \times 5 =$
$7 \times 5 =$	$5 \times 9 =$
$8 \times 9 =$	$0 \times 5 =$
$3 \times 5 =$	$6 \times 9 =$

G.

$2 \times 9 =$	$0 \times 5 =$
$5 \times 5 =$	$9 \times 9 =$
$7 \times 9 =$	$4 \times 5 =$
$1 \times 5 =$	$3 \times 9 =$
$8 \times 9 =$	$6 \times 5 =$

H.

$2 \times 5 =$	$0 \times 9 =$
$5 \times 9 =$	$9 \times 5 =$
$7 \times 5 =$	$4 \times 9 =$
$1 \times 9 =$	$3 \times 5 =$
$8 \times 5 =$	$6 \times 9 =$

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More Multiplication of 5 and 9

IN CLASS

A.

$6 \times 9 =$	$3 \times 5 =$
$9 \times 5 =$	$0 \times 9 =$
$8 \times 9 =$	$7 \times 5 =$
$2 \times 5 =$	$1 \times 9 =$

B.

$6 \times 5 =$	$3 \times 9 =$
$9 \times 9 =$	$0 \times 5 =$
$8 \times 5 =$	$7 \times 9 =$
$2 \times 9 =$	$1 \times 5 =$

C.

$3 \times 9 =$	$8 \times 5 =$
$7 \times 5 =$	$4 \times 9 =$
$9 \times 9 =$	$5 \times 5 =$
$1 \times 5 =$	$0 \times 9 =$

D.

$3 \times 5 =$	$8 \times 9 =$
$7 \times 9 =$	$4 \times 5 =$
$9 \times 5 =$	$5 \times 9 =$
$1 \times 9 =$	$0 \times 5 =$

Name _____

DO AT HOME

$2 \times 9 = 18$	$5 \times 5 =$
$3 \times 5 = 15$	$9 \times 9 =$
$7 \times 9 = 63$	$8 \times 5 =$
$6 \times 5 = 30$	$1 \times 9 =$
$2 \times 5 = 10$	$5 \times 9 =$
$3 \times 9 = 27$	$9 \times 5 =$
$7 \times 5 = 35$	$8 \times 9 =$
$6 \times 9 = 54$	$1 \times 5 =$
$3 \times 5 = 15$	$0 \times 9 =$
$4 \times 9 = 36$	$7 \times 5 =$
$9 \times 5 = 45$	$6 \times 9 =$
$1 \times 9 = 9$	$5 \times 5 =$
$3 \times 9 = 27$	$0 \times 5 =$
$4 \times 5 = 20$	$7 \times 9 =$
$9 \times 9 = 81$	$6 \times 5 =$
$1 \times 5 = 5$	$5 \times 9 =$

DO AT HOME

$6 \times 9 =$	$5 \times 5 =$
$7 \times 5 =$	$4 \times 9 =$
$3 \times 9 =$	$9 \times 5 =$
$0 \times 5 =$	$8 \times 9 =$
$1 \times 9 =$	$2 \times 5 =$
$6 \times 5 =$	$5 \times 9 =$
$7 \times 9 =$	$4 \times 5 =$
$3 \times 5 =$	$9 \times 9 =$
$0 \times 9 =$	$8 \times 5 =$
$1 \times 5 =$	$2 \times 9 =$
$2 \times 9 =$	$0 \times 5 =$
$3 \times 5 =$	$6 \times 9 =$
$4 \times 9 =$	$7 \times 5 =$
$9 \times 5 =$	$8 \times 9 =$
$5 \times 9 =$	$1 \times 5 =$
$2 \times 5 =$	$0 \times 9 =$
$3 \times 9 =$	$6 \times 5 =$
$4 \times 5 =$	$7 \times 9 =$
$9 \times 9 =$	$8 \times 5 =$
$5 \times 5 =$	$1 \times 9 =$

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CLASS SPEED COMPETITION

A.

$5 \times 9 =$	$1 \times 5 =$
$0 \times 5 =$	$4 \times 9 =$
$2 \times 9 =$	$6 \times 5 =$
$8 \times 5 =$	$7 \times 9 =$
$3 \times 9 =$	$9 \times 5 =$

TIME:

B.

$5 \times 5 =$	$1 \times 9 =$
$0 \times 9 =$	$4 \times 5 =$
$2 \times 5 =$	$6 \times 9 =$
$8 \times 9 =$	$7 \times 5 =$
$3 \times 5 =$	$9 \times 9 =$

TIME:

C.

$3 \times 5 =$	$4 \times 9 =$
$9 \times 9 =$	$5 \times 5 =$
$8 \times 5 =$	$0 \times 9 =$
$7 \times 9 =$	$1 \times 5 =$
$2 \times 5 =$	$6 \times 9 =$

TIME:

D.

$3 \times 9 =$	$4 \times 5 =$
$9 \times 5 =$	$5 \times 9 =$
$8 \times 9 =$	$0 \times 5 =$
$7 \times 5 =$	$1 \times 9 =$
$2 \times 9 =$	$6 \times 5 =$

TIME:

And More Multiplication of 5 and 9

IN CLASS

A.

$5 \times 9 =$	$9 \times 5 =$
$4 \times 5 =$	$8 \times 9 =$
$3 \times 9 =$	$7 \times 5 =$
$2 \times 5 =$	$6 \times 9 =$

B.

$5 \times 5 =$	$9 \times 9 =$
$4 \times 9 =$	$8 \times 5 =$
$3 \times 5 =$	$7 \times 9 =$
$2 \times 9 =$	$6 \times 5 =$

C.

$0 \times 5 =$	$5 \times 9 =$
$1 \times 9 =$	$7 \times 5 =$
$9 \times 5 =$	$8 \times 9 =$
$3 \times 9 =$	$6 \times 5 =$

D.

$0 \times 9 =$	$5 \times 5 =$
$1 \times 5 =$	$7 \times 9 =$
$9 \times 9 =$	$8 \times 5 =$
$3 \times 5 =$	$6 \times 9 =$

Name _____

DO AT HOME

$9 \times 9 =$	$8 \times 5 =$
$7 \times 5 =$	$6 \times 9 =$
$5 \times 9 =$	$4 \times 5 =$
$3 \times 5 =$	$2 \times 9 =$

$9 \times 5 =$	$8 \times 9 =$
$7 \times 9 =$	$6 \times 5 =$
$5 \times 5 =$	$4 \times 9 =$
$3 \times 9 =$	$2 \times 5 =$

$1 \times 9 =$	$5 \times 5 =$
$8 \times 5 =$	$4 \times 9 =$
$3 \times 9 =$	$7 \times 5 =$
$6 \times 5 =$	$2 \times 9 =$

$1 \times 5 =$	$5 \times 9 =$
$8 \times 9 =$	$4 \times 5 =$
$3 \times 5 =$	$7 \times 9 =$
$6 \times 9 =$	$2 \times 5 =$

DO AT HOME

$2 \times 9 =$	$1 \times 5 =$
$9 \times 5 =$	$7 \times 9 =$
$8 \times 9 =$	$3 \times 5 =$
$0 \times 5 =$	$5 \times 9 =$
$6 \times 9 =$	$4 \times 5 =$
$2 \times 5 =$	$1 \times 9 =$
$9 \times 9 =$	$7 \times 5 =$
$8 \times 5 =$	$3 \times 9 =$
$0 \times 9 =$	$5 \times 5 =$
$6 \times 5 =$	$4 \times 9 =$
$1 \times 9 =$	$7 \times 5 =$
$6 \times 5 =$	$2 \times 9 =$
$4 \times 9 =$	$5 \times 5 =$
$8 \times 5 =$	$9 \times 9 =$
$3 \times 9 =$	$0 \times 5 =$
$1 \times 5 =$	$7 \times 9 =$
$6 \times 9 =$	$2 \times 5 =$
$4 \times 5 =$	$5 \times 9 =$
$8 \times 9 =$	$9 \times 5 =$
$3 \times 5 =$	$0 \times 9 =$

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CLASS SPEED COMPETITION

A.

$9 \times 9 =$	$2 \times 5 =$
$0 \times 5 =$	$6 \times 9 =$
$8 \times 9 =$	$3 \times 5 =$
$1 \times 5 =$	$5 \times 9 =$

TIME:

B.

$9 \times 5 =$	$2 \times 9 =$
$0 \times 9 =$	$6 \times 5 =$
$8 \times 5 =$	$3 \times 9 =$
$1 \times 9 =$	$5 \times 5 =$

TIME:

C.

$5 \times 9 =$	$1 \times 5 =$
$3 \times 5 =$	$2 \times 9 =$
$6 \times 9 =$	$0 \times 5 =$
$9 \times 5 =$	$4 \times 9 =$

TIME:

D.

$5 \times 5 =$	$1 \times 9 =$
$3 \times 9 =$	$2 \times 5 =$
$6 \times 5 =$	$0 \times 9 =$
$9 \times 9 =$	$4 \times 5 =$

TIME:

Multiplication Chart

Number: 6

Problem	Unit	Manipulation	Pupil Counts How Many Times	Fingers Read
0 × 6	——	——	"ZERO"	0
1 × 6	6	PRESS 6 (5 + 1)	"ONE"	6
2 × 6	+ 6	EXCHANGE 5 + 1	"TWO"	12
3 × 6	+ 6	PRESS 5 + 1	"THREE"	18
4 × 6	+ 6	EXCHANGE 5 + 1	"FOUR"	24
5 × 6	+ 6	PRESS 10 & CLEAR 4	"FIVE"	30
6 × 6	+ 6	PRESS 6 (5 + 1)	"SIX"	36
7 × 6	+ 6	EXCHANGE 5 + 1	"SEVEN"	42
8 × 6	+ 6	PRESS 5 + 1	"EIGHT"	48
9 × 6	+ 6	BIG EXCHANGE: SIMULTANEOUSLY Left Hand—Press 50 & Clear 40 Right Hand—Clear 5 then Press 1	"NINE"	54
10 × 6	+ 6	PRESS 10 & CLEAR 4	"TEN"	60
	Total: 60			

Number: 4

Problem	Unit	Manipulation	Pupil Counts How Many	Fingers Read
0 × 4	——	——	"ZERO"	0
1 × 4	4	PRESS 4	"ONE"	4
2 × 4	+ 4	PRESS 5 & CLEAR 1	"TWO"	8
3 × 4	+ 4	EXCHANGE 5 & CLEAR 1	"THREE"	12
4 × 4	+ 4	PRESS 5 & CLEAR 1	"FOUR"	16
5 × 4	+ 4	EXCHANGE 5 & CLEAR 1	"FIVE"	20
6 × 4	+ 4	PRESS 4	"SIX"	24
7 × 4	+ 4	PRESS 5 & CLEAR 1	"SEVEN"	28
8 × 4	+ 4	EXCHANGE 5 & CLEAR 1	"EIGHT"	32
9 × 4	+ 4	PRESS 5 & CLEAR 1	"NINE"	36
10 × 4	+ 4	EXCHANGE 5 & CLEAR 1	"TEN"	40
	Total: 40			

After completing reverse side of this page, instruct pupil to fold along perforation to protect chart for future use. It is suggested that a strip of cellophane tape be run along the perforation.

Multiplication of 6 and 4

IN CLASS

A.

$2 \times 6 =$	$4 \times 4 =$
$9 \times 4 =$	$3 \times 6 =$
$8 \times 6 =$	$1 \times 4 =$
$0 \times 4 =$	$5 \times 6 =$
$6 \times 6 =$	$7 \times 4 =$

B.

$2 \times 4 =$	$4 \times 6 =$
$9 \times 6 =$	$3 \times 4 =$
$8 \times 4 =$	$1 \times 6 =$
$0 \times 6 =$	$5 \times 4 =$
$6 \times 4 =$	$7 \times 6 =$

C.

$1 \times 6 =$	$7 \times 4 =$
$6 \times 4 =$	$2 \times 6 =$
$4 \times 6 =$	$5 \times 4 =$
$8 \times 4 =$	$9 \times 6 =$
$3 \times 6 =$	$0 \times 4 =$

D.

$1 \times 4 =$	$7 \times 6 =$
$6 \times 6 =$	$2 \times 4 =$
$4 \times 4 =$	$5 \times 6 =$
$8 \times 6 =$	$9 \times 4 =$
$3 \times 4 =$	$0 \times 6 =$

IN CLASS

E.

$9 \times 6 =$	$4 \times 4 =$
$8 \times 4 =$	$3 \times 6 =$
$7 \times 6 =$	$2 \times 4 =$
$6 \times 4 =$	$1 \times 6 =$
$5 \times 6 =$	$0 \times 4 =$

F.

$9 \times 4 =$	$4 \times 6 =$
$8 \times 6 =$	$3 \times 4 =$
$7 \times 4 =$	$2 \times 6 =$
$6 \times 6 =$	$1 \times 4 =$
$5 \times 4 =$	$0 \times 6 =$

G.

$2 \times 6 =$	$1 \times 4 =$
$5 \times 4 =$	$6 \times 6 =$
$0 \times 6 =$	$7 \times 4 =$
$9 \times 4 =$	$4 \times 6 =$
$8 \times 6 =$	$3 \times 4 =$

H.

$2 \times 4 =$	$1 \times 6 =$
$5 \times 6 =$	$6 \times 4 =$
$0 \times 4 =$	$7 \times 6 =$
$9 \times 6 =$	$4 \times 4 =$
$8 \times 4 =$	$3 \times 6 =$

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More Multiplication of 6 and 4

IN CLASS

A.

$5 \times 4 =$	$9 \times 6 =$
$4 \times 6 =$	$8 \times 4 =$
$3 \times 4 =$	$7 \times 6 =$
$2 \times 6 =$	$6 \times 4 =$
$1 \times 4 =$	$0 \times 6 =$

B.

$5 \times 6 =$	$9 \times 4 =$
$4 \times 4 =$	$8 \times 6 =$
$3 \times 6 =$	$7 \times 4 =$
$2 \times 4 =$	$6 \times 6 =$
$1 \times 6 =$	$0 \times 4 =$

C.

$0 \times 6 =$	$5 \times 4 =$
$1 \times 4 =$	$7 \times 6 =$
$9 \times 6 =$	$8 \times 4 =$
$3 \times 4 =$	$6 \times 6 =$
$4 \times 6 =$	$2 \times 4 =$

D.

$0 \times 4 =$	$5 \times 6 =$
$1 \times 6 =$	$7 \times 4 =$
$9 \times 4 =$	$8 \times 6 =$
$3 \times 6 =$	$6 \times 4 =$
$4 \times 4 =$	$2 \times 6 =$

Name _____

DO AT HOME

$9 \times 6 =$	$8 \times 4 =$
$7 \times 4 =$	$6 \times 6 =$
$5 \times 6 =$	$4 \times 4 =$
$3 \times 4 =$	$2 \times 6 =$
$1 \times 6 =$	$0 \times 4 =$
$9 \times 4 =$	$8 \times 6 =$
$7 \times 6 =$	$6 \times 4 =$
$5 \times 4 =$	$4 \times 6 =$
$3 \times 6 =$	$2 \times 4 =$
$1 \times 4 =$	$0 \times 6 =$
$3 \times 4 =$	$2 \times 6 =$
$6 \times 6 =$	$7 \times 4 =$
$8 \times 4 =$	$4 \times 6 =$
$0 \times 6 =$	$5 \times 4 =$
$1 \times 4 =$	$9 \times 6 =$
$3 \times 6 =$	$2 \times 4 =$
$6 \times 4 =$	$7 \times 6 =$
$8 \times 6 =$	$4 \times 4 =$
$0 \times 4 =$	$5 \times 6 =$
$1 \times 6 =$	$9 \times 4 =$

DO AT HOME

$7 \times 6 =$	$3 \times 4 =$
$8 \times 4 =$	$5 \times 6 =$
$6 \times 6 =$	$2 \times 4 =$
$0 \times 4 =$	$9 \times 6 =$
$2 \times 6 =$	$4 \times 4 =$
$7 \times 4 =$	$3 \times 6 =$
$8 \times 6 =$	$5 \times 4 =$
$6 \times 4 =$	$2 \times 6 =$
$0 \times 6 =$	$9 \times 4 =$
$2 \times 4 =$	$4 \times 6 =$
$1 \times 6 =$	$2 \times 4 =$
$9 \times 4 =$	$0 \times 6 =$
$7 \times 6 =$	$3 \times 4 =$
$5 \times 4 =$	$8 \times 6 =$
$6 \times 6 =$	$4 \times 4 =$
$1 \times 4 =$	$2 \times 6 =$
$9 \times 6 =$	$0 \times 4 =$
$5 \times 4 =$	$3 \times 6 =$
$7 \times 6 =$	$8 \times 4 =$
$6 \times 4 =$	$4 \times 6 =$

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CLASS SPEED COMPETITION

A.

$5 \times 4 =$	$1 \times 6 =$
$0 \times 6 =$	$4 \times 4 =$
$2 \times 4 =$	$6 \times 6 =$
$8 \times 6 =$	$7 \times 4 =$
$3 \times 4 =$	$9 \times 6 =$

TIME:

B.

$5 \times 6 =$	$1 \times 4 =$
$0 \times 4 =$	$4 \times 6 =$
$2 \times 6 =$	$6 \times 4 =$
$8 \times 4 =$	$7 \times 6 =$
$3 \times 6 =$	$9 \times 4 =$

TIME:

C.

$0 \times 4 =$	$9 \times 6 =$
$6 \times 6 =$	$2 \times 4 =$
$3 \times 4 =$	$7 \times 6 =$
$8 \times 6 =$	$4 \times 4 =$
$1 \times 4 =$	$5 \times 6 =$

TIME:

D.

$0 \times 6 =$	$9 \times 4 =$
$6 \times 4 =$	$2 \times 6 =$
$3 \times 6 =$	$7 \times 4 =$
$8 \times 4 =$	$4 \times 6 =$
$1 \times 6 =$	$5 \times 4 =$

TIME:

And More Multiplication of 6 and 4

IN CLASS

A.

$6 \times 6 =$	$4 \times 4 =$
$2 \times 4 =$	$3 \times 6 =$
$9 \times 6 =$	$1 \times 4 =$
$0 \times 4 =$	$7 \times 6 =$
$8 \times 6 =$	$5 \times 4 =$

B.

$6 \times 4 =$	$4 \times 6 =$
$2 \times 6 =$	$3 \times 4 =$
$9 \times 4 =$	$1 \times 6 =$
$0 \times 6 =$	$7 \times 4 =$
$8 \times 4 =$	$5 \times 6 =$

C.

$3 \times 6 =$	$7 \times 4 =$
$4 \times 4 =$	$8 \times 6 =$
$2 \times 6 =$	$9 \times 4 =$
$1 \times 4 =$	$0 \times 6 =$
$6 \times 6 =$	$5 \times 4 =$

D.

$3 \times 4 =$	$7 \times 6 =$
$4 \times 6 =$	$8 \times 4 =$
$2 \times 4 =$	$9 \times 6 =$
$1 \times 6 =$	$0 \times 4 =$
$6 \times 4 =$	$5 \times 6 =$

Name _____

DO AT HOME

$9 \times 6 =$	$5 \times 4 =$
$1 \times 4 =$	$3 \times 6 =$
$0 \times 6 =$	$1 \times 4 =$
$6 \times 4 =$	$4 \times 6 =$
$8 \times 6 =$	$7 \times 4 =$
$9 \times 4 =$	$5 \times 6 =$
$1 \times 6 =$	$3 \times 4 =$
$0 \times 4 =$	$1 \times 6 =$
$6 \times 6 =$	$4 \times 4 =$
$8 \times 4 =$	$7 \times 6 =$
$1 \times 6 =$	$5 \times 4 =$
$9 \times 4 =$	$4 \times 6 =$
$6 \times 6 =$	$3 \times 4 =$
$8 \times 4 =$	$7 \times 6 =$
$0 \times 6 =$	$2 \times 4 =$
$1 \times 4 =$	$5 \times 6 =$
$9 \times 6 =$	$4 \times 4 =$
$6 \times 4 =$	$3 \times 6 =$
$8 \times 6 =$	$7 \times 4 =$
$0 \times 4 =$	$2 \times 6 =$

DO AT HOME

$6 \times 6 =$	$7 \times 4 =$
$8 \times 4 =$	$0 \times 6 =$
$5 \times 6 =$	$4 \times 4 =$
$9 \times 4 =$	$3 \times 6 =$
$1 \times 6 =$	$2 \times 4 =$
$6 \times 4 =$	$7 \times 6 =$
$8 \times 6 =$	$0 \times 4 =$
$5 \times 4 =$	$4 \times 6 =$
$9 \times 6 =$	$3 \times 4 =$
$1 \times 4 =$	$2 \times 6 =$
$5 \times 6 =$	$1 \times 4 =$
$0 \times 4 =$	$8 \times 6 =$
$7 \times 6 =$	$4 \times 4 =$
$9 \times 4 =$	$3 \times 6 =$
$2 \times 6 =$	$9 \times 4 =$
$5 \times 4 =$	$1 \times 6 =$
$0 \times 6 =$	$8 \times 4 =$
$7 \times 4 =$	$4 \times 6 =$
$9 \times 6 =$	$3 \times 4 =$
$2 \times 4 =$	$9 \times 6 =$

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CLASS SPEED COMPETITION

A.

$5 \times 6 =$	$1 \times 4 =$
$7 \times 4 =$	$0 \times 6 =$
$3 \times 6 =$	$4 \times 4 =$
$6 \times 4 =$	$8 \times 6 =$
$9 \times 6 =$	$2 \times 4 =$

TIME:

B.

$5 \times 4 =$	$1 \times 6 =$
$7 \times 6 =$	$0 \times 4 =$
$3 \times 4 =$	$4 \times 6 =$
$6 \times 6 =$	$8 \times 4 =$
$9 \times 4 =$	$2 \times 6 =$

TIME:

C.

$7 \times 4 =$	$2 \times 6 =$
$1 \times 6 =$	$8 \times 4 =$
$3 \times 4 =$	$6 \times 6 =$
$5 \times 6 =$	$4 \times 4 =$
$0 \times 4 =$	$9 \times 6 =$

TIME:

D.

$7 \times 6 =$	$2 \times 4 =$
$1 \times 4 =$	$8 \times 6 =$
$3 \times 6 =$	$6 \times 4 =$
$5 \times 4 =$	$4 \times 6 =$
$0 \times 6 =$	$9 \times 4 =$

TIME:

Multiplication Chart

Number: 2

Problem	Unit	Manipulation	Pupil Counts How Many Times	Fingers Read
0 × 2	——	——	"ZERO"	0
1 × 2	2	PRESS 2	"ONE"	2
2 × 2	+ 2	PRESS 2	"TWO"	4
★ 3 × 2	+ 2	PRESS 5 & CLEAR 3	"THREE"	6
4 × 2	+ 2	PRESS 2	"FOUR"	8
★ 5 × 2	+ 2	EXCHANGE 5 & CLEAR 3	"FIVE"	10
6 × 2	+ 2	PRESS 2	"SIX"	12
7 × 2	+ 2	PRESS 2	"SEVEN"	14
★ 8 × 2	+ 2	PRESS 5 & CLEAR 3	"EIGHT"	16
9 × 2	+ 2	PRESS 2	"NINE"	18
★ 10 × 2	+ 2	EXCHANGE 5 & CLEAR 3	"TEN"	20
	Total: 20			

★ At the outset, Unit by Unit (Stage 1) Manipulation will simplify these transitions.

Number: 8

Problem	Unit	Manipulation	Pupil Counts How Many Times	Fingers Read
0 × 8	——	——	"ZERO"	0
1 × 8	8	PRESS 8 (5 + 3)	"ONE"	8
2 × 8	+ 8	PRESS 10 & CLEAR 2	"TWO"	16
3 × 8	+ 8	EXCHANGE 5 + 3	"THREE"	24
4 × 8	+ 8	PRESS 10 & CLEAR 2	"FOUR"	32
5 × 8	+ 8	PRESS 10 & CLEAR 2	"FIVE"	40
6 × 8	+ 8	PRESS 8 (5 + 3)	"SIX"	48
7 × 8	+ 8	PRESS 10 & CLEAR 2	"SEVEN"	56
8 × 8	+ 8	EXCHANGE 5 + 3	"EIGHT	64
9 × 8	+ 8	PRESS 10 & CLEAR 2	"NINE"	72
10 × 8	+ 8	PRESS 10 & CLEAR 2	"TEN"	80
	Total: 80			

After completing reverse side of this page, instruct pupil to fold along perforation to protect chart for future use. It is suggested that a strip of cellophane tape be run along the perforation.

Multiplication of 2 and 8

IN CLASS

A.

$2 \times 8 =$	$4 \times 2 =$
$9 \times 2 =$	$3 \times 8 =$
$8 \times 8 =$	$1 \times 2 =$
$0 \times 2 =$	$5 \times 8 =$
$6 \times 8 =$	$7 \times 2 =$

B.

$2 \times 2 =$	$4 \times 8 =$
$9 \times 8 =$	$3 \times 2 =$
$8 \times 2 =$	$1 \times 8 =$
$0 \times 8 =$	$5 \times 2 =$
$6 \times 2 =$	$7 \times 8 =$

C.

$1 \times 8 =$	$7 \times 2 =$
$6 \times 2 =$	$2 \times 8 =$
$4 \times 8 =$	$5 \times 2 =$
$8 \times 2 =$	$9 \times 8 =$
$3 \times 8 =$	$0 \times 2 =$

D.

$1 \times 2 =$	$7 \times 8 =$
$6 \times 8 =$	$2 \times 2 =$
$4 \times 2 =$	$5 \times 8 =$
$8 \times 8 =$	$9 \times 2 =$
$3 \times 2 =$	$0 \times 8 =$

IN CLASS

E.

$9 \times 8 =$	$4 \times 2 =$
$8 \times 2 =$	$3 \times 8 =$
$7 \times 8 =$	$2 \times 2 =$
$6 \times 2 =$	$1 \times 8 =$
$5 \times 8 =$	$0 \times 2 =$

F.

$9 \times 2 =$	$4 \times 8 =$
$8 \times 8 =$	$3 \times 2 =$
$7 \times 2 =$	$2 \times 8 =$
$6 \times 8 =$	$1 \times 2 =$
$5 \times 2 =$	$0 \times 8 =$

G.

$7 \times 8 =$	$0 \times 2 =$
$3 \times 2 =$	$6 \times 8 =$
$8 \times 8 =$	$5 \times 2 =$
$1 \times 2 =$	$2 \times 8 =$
$4 \times 8 =$	$9 \times 2 =$

H.

$7 \times 2 =$	$0 \times 8 =$
$3 \times 8 =$	$6 \times 2 =$
$8 \times 2 =$	$5 \times 8 =$
$1 \times 8 =$	$2 \times 2 =$
$4 \times 2 =$	$9 \times 8 =$

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90

More Multiplication of 2 and 8

IN CLASS

A.

$5 \times 8 =$	$9 \times 2 =$
$4 \times 2 =$	$8 \times 8 =$
$3 \times 8 =$	$7 \times 2 =$
$2 \times 2 =$	$6 \times 8 =$
$1 \times 8 =$	$0 \times 2 =$

B.

$5 \times 2 =$	$9 \times 8 =$
$4 \times 8 =$	$8 \times 2 =$
$3 \times 2 =$	$7 \times 8 =$
$2 \times 8 =$	$6 \times 2 =$
$1 \times 2 =$	$0 \times 8 =$

C.

$1 \times 8 =$	$7 \times 2 =$
$0 \times 2 =$	$5 \times 8 =$
$9 \times 8 =$	$8 \times 2 =$
$4 \times 2 =$	$6 \times 8 =$
$3 \times 8 =$	$2 \times 2 =$

D.

$1 \times 2 =$	$7 \times 8 =$
$0 \times 8 =$	$5 \times 2 =$
$9 \times 2 =$	$8 \times 8 =$
$4 \times 8 =$	$6 \times 2 =$
$3 \times 2 =$	$2 \times 8 =$

Name _____

DO AT HOME

$9 \times 8 =$	$8 \times 2 =$
$7 \times 2 =$	$6 \times 8 =$
$5 \times 8 =$	$4 \times 2 =$
$3 \times 2 =$	$2 \times 8 =$
$1 \times 8 =$	$0 \times 2 =$

$9 \times 2 =$	$8 \times 8 =$
$7 \times 8 =$	$6 \times 2 =$
$5 \times 2 =$	$4 \times 8 =$
$3 \times 8 =$	$2 \times 2 =$
$1 \times 2 =$	$0 \times 8 =$

$2 \times 8 =$	$1 \times 2 =$
$4 \times 2 =$	$5 \times 8 =$
$8 \times 8 =$	$0 \times 2 =$
$6 \times 2 =$	$9 \times 8 =$
$3 \times 8 =$	$7 \times 2 =$

$2 \times 2 =$	$1 \times 8 =$
$4 \times 8 =$	$5 \times 2 =$
$8 \times 2 =$	$0 \times 8 =$
$6 \times 8 =$	$9 \times 2 =$
$3 \times 2 =$	$7 \times 8 =$

DO AT HOME

$1 \times 8 =$	$4 \times 2 =$
$9 \times 2 =$	$0 \times 8 =$
$2 \times 8 =$	$8 \times 2 =$
$6 \times 2 =$	$7 \times 8 =$
$3 \times 8 =$	$5 \times 2 =$
$1 \times 2 =$	$4 \times 8 =$
$9 \times 8 =$	$0 \times 2 =$
$2 \times 2 =$	$8 \times 8 =$
$6 \times 8 =$	$7 \times 2 =$
$3 \times 2 =$	$5 \times 8 =$
$4 \times 8 =$	$6 \times 2 =$
$9 \times 2 =$	$7 \times 8 =$
$5 \times 8 =$	$0 \times 2 =$
$1 \times 2 =$	$2 \times 8 =$
$3 \times 8 =$	$8 \times 2 =$
$4 \times 2 =$	$6 \times 8 =$
$9 \times 8 =$	$7 \times 2 =$
$5 \times 2 =$	$0 \times 8 =$
$1 \times 8 =$	$2 \times 2 =$
$3 \times 2 =$	$8 \times 8 =$

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CLASS SPEED COMPETITION

A.

$5 \times 8 =$	$1 \times 2 =$
$0 \times 2 =$	$4 \times 8 =$
$2 \times 8 =$	$6 \times 2 =$
$8 \times 2 =$	$7 \times 8 =$
$3 \times 8 =$	$9 \times 2 =$

TIME:

B.

$5 \times 2 =$	$1 \times 8 =$
$0 \times 8 =$	$4 \times 2 =$
$2 \times 2 =$	$6 \times 8 =$
$8 \times 8 =$	$7 \times 2 =$
$3 \times 2 =$	$9 \times 8 =$

TIME:

C.

$3 \times 8 =$	$7 \times 2 =$
$6 \times 2 =$	$9 \times 8 =$
$8 \times 8 =$	$0 \times 2 =$
$4 \times 2 =$	$5 \times 8 =$
$2 \times 8 =$	$1 \times 2 =$

TIME:

D.

$3 \times 2 =$	$7 \times 8 =$
$6 \times 8 =$	$9 \times 2 =$
$8 \times 2 =$	$0 \times 8 =$
$4 \times 8 =$	$5 \times 2 =$
$2 \times 2 =$	$1 \times 8 =$

TIME:

And More Multiplication of 2 and 8

IN CLASS

A.

$4 \times 8 =$	$3 \times 2 =$
$5 \times 2 =$	$7 \times 8 =$
$1 \times 8 =$	$6 \times 2 =$
$2 \times 2 =$	$0 \times 8 =$
$9 \times 8 =$	$8 \times 2 =$

B.

$4 \times 2 =$	$3 \times 8 =$
$5 \times 8 =$	$7 \times 2 =$
$1 \times 2 =$	$6 \times 8 =$
$2 \times 8 =$	$0 \times 2 =$
$9 \times 2 =$	$8 \times 8 =$

C.

$2 \times 8 =$	$4 \times 2 =$
$8 \times 2 =$	$6 \times 8 =$
$3 \times 8 =$	$5 \times 2 =$
$7 \times 2 =$	$1 \times 8 =$
$0 \times 8 =$	$9 \times 2 =$

D.

$2 \times 2 =$	$4 \times 8 =$
$8 \times 8 =$	$6 \times 2 =$
$3 \times 2 =$	$5 \times 8 =$
$7 \times 8 =$	$1 \times 2 =$
$0 \times 2 =$	$9 \times 8 =$

Name _____

DO AT HOME

$8 \times 8 =$	$7 \times 2 =$
$2 \times 2 =$	$5 \times 8 =$
$1 \times 8 =$	$4 \times 2 =$
$0 \times 2 =$	$3 \times 8 =$
$9 \times 8 =$	$6 \times 2 =$

$8 \times 2 =$	$7 \times 8 =$
$2 \times 8 =$	$5 \times 2 =$
$1 \times 2 =$	$4 \times 8 =$
$0 \times 8 =$	$3 \times 2 =$
$9 \times 2 =$	$6 \times 8 =$

$6 \times 8 =$	$5 \times 2 =$
$8 \times 2 =$	$0 \times 8 =$
$7 \times 8 =$	$4 \times 2 =$
$1 \times 2 =$	$6 \times 8 =$
$2 \times 8 =$	$3 \times 2 =$

$6 \times 2 =$	$5 \times 8 =$
$8 \times 8 =$	$0 \times 2 =$
$7 \times 2 =$	$4 \times 8 =$
$1 \times 8 =$	$6 \times 2 =$
$2 \times 2 =$	$3 \times 8 =$

DO AT HOME

$1 \times 8 =$	$6 \times 2 =$
$8 \times 2 =$	$0 \times 8 =$
$7 \times 8 =$	$4 \times 2 =$
$9 \times 2 =$	$2 \times 8 =$
$5 \times 8 =$	$3 \times 2 =$
$1 \times 2 =$	$6 \times 8 =$
$8 \times 8 =$	$0 \times 2 =$
$7 \times 2 =$	$4 \times 8 =$
$9 \times 8 =$	$2 \times 2 =$
$5 \times 2 =$	$3 \times 8 =$
$2 \times 8 =$	$5 \times 2 =$
$9 \times 2 =$	$6 \times 8 =$
$0 \times 8 =$	$3 \times 2 =$
$7 \times 2 =$	$4 \times 8 =$
$8 \times 8 =$	$1 \times 2 =$
$2 \times 2 =$	$5 \times 8 =$
$9 \times 8 =$	$6 \times 2 =$
$0 \times 2 =$	$3 \times 8 =$
$7 \times 8 =$	$4 \times 2 =$
$8 \times 2 =$	$1 \times 8 =$

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CLASS SPEED COMPETITION

A.

$6 \times 8 =$	$9 \times 2 =$
$4 \times 2 =$	$8 \times 8 =$
$3 \times 8 =$	$5 \times 2 =$
$1 \times 2 =$	$2 \times 8 =$
$0 \times 8 =$	$7 \times 2 =$

TIME:

B.

$6 \times 2 =$	$9 \times 8 =$
$4 \times 8 =$	$8 \times 2 =$
$3 \times 2 =$	$5 \times 8 =$
$1 \times 8 =$	$2 \times 2 =$
$0 \times 2 =$	$7 \times 8 =$

TIME:

C.

$3 \times 8 =$	$4 \times 2 =$
$8 \times 2 =$	$2 \times 8 =$
$6 \times 8 =$	$9 \times 2 =$
$7 \times 2 =$	$5 \times 8 =$
$0 \times 8 =$	$1 \times 2 =$

TIME:

D.

$3 \times 2 =$	$4 \times 8 =$
$8 \times 8 =$	$2 \times 2 =$
$6 \times 2 =$	$9 \times 8 =$
$7 \times 8 =$	$5 \times 2 =$
$0 \times 2 =$	$1 \times 8 =$

TIME:

Multiplication Chart

Number: 3

Problem	Unit	Manipulation	Pupil Counts How Many	Fingers Read
0 × 3	——	——	"ZERO"	0
1 × 3	3	PRESS 3	"ONE"	3
2 × 3	+ 3	PRESS 5 & CLEAR 2	"TWO"	6
3 × 3	+ 3	PRESS 3	"THREE"	9
4 × 3	+ 3	EXCHANGE 5 & CLEAR 2	"FOUR"	12
5 × 3	+ 3	PRESS 5 & CLEAR 2	"FIVE"	15
6 × 3	+ 3	PRESS 3	"SIX"	18
7 × 3	+ 3	EXCHANGE 5 & CLEAR 2	"SEVEN"	21
8 × 3	+ 3	PRESS 3	"EIGHT"	24
9 × 3	+ 3	PRESS 5 & CLEAR 2	"NINE"	27
10 × 3	+ 3	EXCHANGE 5 & CLEAR 2	"TEN"	30
	Total: 30			

Number: 7

Problem	Unit	Manipulation	Pupil Counts How Many	Fingers Read
0 × 7	——	——	"ZERO"	0
1 × 3	3	PRESS 7 (5 + 2)	"ONE"	7
2 × 7	+ 7	EXCHANGE 5 + 2	"TWO"	14
3 × 7	+ 7	PRESS 10 & CLEAR 3	"THREE"	21
4 × 7	+ 7	PRESS 7 (5 + 2)	"FOUR"	28
5 × 7	+ 7	PRESS 10 & CLEAR 3	"FIVE"	35
6 × 7	+ 7	EXCHANGE 5 + 2	"SIX"	42
7 × 7	+ 7	PRESS 7 (5 + 2)	"SEVEN"	49
8 × 7	+ 7	PRESS 10 & CLEAR 3	"EIGHT"	56
9 × 7	+ 7	EXCHANGE 5 + 2	"NINE"	63
10 × 7	+ 7	PRESS 10 & CLEAR 3	"TEN"	70
	Total: 70			

After completing reverse side of this page, instruct pupil to fold along perforation to protect chart for future use. It is suggested that a strip of cellophane tape be run along the perforation.

Multiplication of 3 and 7

IN CLASS

A.

$2 \times 7 =$	$4 \times 3 =$
$9 \times 3 =$	$3 \times 7 =$
$8 \times 7 =$	$1 \times 3 =$
$0 \times 3 =$	$5 \times 7 =$
$6 \times 7 =$	$7 \times 3 =$

B.

$2 \times 3 =$	$4 \times 7 =$
$9 \times 7 =$	$3 \times 3 =$
$8 \times 3 =$	$1 \times 7 =$
$0 \times 7 =$	$5 \times 3 =$
$6 \times 3 =$	$7 \times 7 =$

C.

$1 \times 7 =$	$7 \times 3 =$
$6 \times 3 =$	$2 \times 7 =$
$4 \times 7 =$	$5 \times 3 =$
$8 \times 3 =$	$9 \times 7 =$
$3 \times 7 =$	$0 \times 3 =$

D.

$1 \times 3 =$	$7 \times 7 =$
$6 \times 7 =$	$2 \times 3 =$
$4 \times 3 =$	$5 \times 7 =$
$8 \times 7 =$	$9 \times 3 =$
$3 \times 3 =$	$0 \times 7 =$

IN CLASS

E.

$9 \times 7 =$	$4 \times 3 =$
$8 \times 3 =$	$3 \times 7 =$
$7 \times 7 =$	$2 \times 3 =$
$6 \times 3 =$	$1 \times 7 =$
$5 \times 7 =$	$0 \times 3 =$

F.

$9 \times 3 =$	$4 \times 7 =$
$8 \times 7 =$	$3 \times 3 =$
$7 \times 3 =$	$2 \times 7 =$
$6 \times 7 =$	$1 \times 3 =$
$5 \times 3 =$	$0 \times 7 =$

G.

$4 \times 7 =$	$6 \times 3 =$
$1 \times 3 =$	$9 \times 7 =$
$5 \times 7 =$	$8 \times 3 =$
$3 \times 3 =$	$7 \times 7 =$
$0 \times 7 =$	$2 \times 3 =$

H.

$4 \times 3 =$	$6 \times 7 =$
$1 \times 7 =$	$9 \times 3 =$
$5 \times 3 =$	$8 \times 7 =$
$3 \times 7 =$	$7 \times 3 =$
$0 \times 3 =$	$2 \times 7 =$

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More Multiplication of 3 and 7

IN CLASS

A.

$3 \times 7 =$	$8 \times 3 =$
$7 \times 3 =$	$2 \times 7 =$
$5 \times 7 =$	$1 \times 3 =$
$0 \times 3 =$	$4 \times 7 =$
$9 \times 7 =$	$6 \times 3 =$

B.

$3 \times 3 =$	$8 \times 7 =$
$7 \times 7 =$	$2 \times 3 =$
$5 \times 3 =$	$1 \times 7 =$
$0 \times 7 =$	$4 \times 3 =$
$9 \times 3 =$	$6 \times 7 =$

C.

$6 \times 7 =$	$4 \times 3 =$
$3 \times 3 =$	$1 \times 7 =$
$9 \times 7 =$	$0 \times 3 =$
$8 \times 8 =$	$2 \times 7 =$
$5 \times 7 =$	$3 \times 3 =$

D.

$6 \times 3 =$	$4 \times 7 =$
$3 \times 7 =$	$1 \times 3 =$
$9 \times 3 =$	$0 \times 7 =$
$8 \times 7 =$	$2 \times 3 =$
$5 \times 3 =$	$3 \times 7 =$

Name _____

DO AT HOME

$5 \times 7 =$	$4 \times 3 =$
$7 \times 3 =$	$6 \times 7 =$
$1 \times 7 =$	$9 \times 3 =$
$3 \times 3 =$	$0 \times 7 =$
$2 \times 7 =$	$8 \times 3 =$

$5 \times 3 =$	$4 \times 7 =$
$7 \times 7 =$	$6 \times 3 =$
$1 \times 3 =$	$9 \times 7 =$
$3 \times 7 =$	$0 \times 3 =$
$2 \times 3 =$	$8 \times 7 =$

$3 \times 7 =$	$5 \times 3 =$
$8 \times 3 =$	$4 \times 7 =$
$6 \times 7 =$	$9 \times 3 =$
$7 \times 3 =$	$2 \times 7 =$
$0 \times 7 =$	$1 \times 3 =$

$3 \times 3 =$	$5 \times 7 =$
$8 \times 7 =$	$4 \times 3 =$
$6 \times 3 =$	$9 \times 7 =$
$7 \times 7 =$	$2 \times 3 =$
$0 \times 3 =$	$1 \times 7 =$

DO AT HOME

$1 \times 7 =$	$2 \times 3 =$
$3 \times 3 =$	$4 \times 7 =$
$5 \times 7 =$	$6 \times 3 =$
$7 \times 3 =$	$8 \times 7 =$
$9 \times 7 =$	$0 \times 3 =$
$1 \times 3 =$	$2 \times 7 =$
$3 \times 7 =$	$4 \times 3 =$
$5 \times 3 =$	$6 \times 7 =$
$7 \times 7 =$	$8 \times 3 =$
$9 \times 3 =$	$0 \times 7 =$
$6 \times 7 =$	$5 \times 3 =$
$0 \times 3 =$	$4 \times 7 =$
$7 \times 7 =$	$9 \times 3 =$
$8 \times 3 =$	$3 \times 7 =$
$1 \times 7 =$	$2 \times 3 =$
$6 \times 3 =$	$5 \times 7 =$
$0 \times 7 =$	$4 \times 3 =$
$7 \times 3 =$	$9 \times 7 =$
$8 \times 7 =$	$3 \times 3 =$
$1 \times 3 =$	$2 \times 7 =$

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CLASS SPEED COMPETITION

A.

$2 \times 7 =$	$4 \times 3 =$
$9 \times 3 =$	$0 \times 7 =$
$5 \times 7 =$	$1 \times 3 =$
$7 \times 3 =$	$8 \times 7 =$
$6 \times 7 =$	$3 \times 3 =$

TIME:

B.

$2 \times 3 =$	$4 \times 7 =$
$9 \times 7 =$	$0 \times 3 =$
$5 \times 3 =$	$1 \times 7 =$
$7 \times 7 =$	$8 \times 3 =$
$6 \times 3 =$	$3 \times 7 =$

TIME:

C.

$5 \times 7 =$	$1 \times 3 =$
$3 \times 3 =$	$7 \times 7 =$
$8 \times 7 =$	$6 \times 3 =$
$0 \times 3 =$	$9 \times 7 =$
$2 \times 7 =$	$4 \times 3 =$

TIME:

D.

$5 \times 3 =$	$1 \times 7 =$
$3 \times 7 =$	$7 \times 3 =$
$8 \times 3 =$	$6 \times 7 =$
$0 \times 7 =$	$9 \times 3 =$
$2 \times 3 =$	$4 \times 7 =$

TIME:

And More Multiplication of 3 and 7

IN CLASS

A.

$5 \times 7 =$	$9 \times 3 =$
$4 \times 3 =$	$8 \times 7 =$
$3 \times 7 =$	$7 \times 3 =$
$2 \times 3 =$	$6 \times 7 =$
$1 \times 7 =$	$0 \times 3 =$

B.

$5 \times 3 =$	$9 \times 7 =$
$4 \times 7 =$	$8 \times 3 =$
$3 \times 3 =$	$7 \times 7 =$
$2 \times 7 =$	$6 \times 3 =$
$1 \times 3 =$	$0 \times 7 =$

C.

$3 \times 7 =$	$2 \times 3 =$
$4 \times 3 =$	$6 \times 7 =$
$9 \times 7 =$	$8 \times 3 =$
$0 \times 3 =$	$5 \times 7 =$
$1 \times 7 =$	$7 \times 3 =$

D.

$3 \times 3 =$	$2 \times 7 =$
$4 \times 7 =$	$6 \times 3 =$
$9 \times 3 =$	$8 \times 7 =$
$0 \times 7 =$	$5 \times 3 =$
$1 \times 3 =$	$7 \times 7 =$

Name _____

DO AT HOME

$1 \times 7 =$	$0 \times 3 =$
$5 \times 3 =$	$2 \times 7 =$
$3 \times 7 =$	$4 \times 3 =$
$7 \times 3 =$	$6 \times 7 =$
$9 \times 7 =$	$8 \times 3 =$
$1 \times 3 =$	$0 \times 7 =$
$5 \times 7 =$	$2 \times 3 =$
$3 \times 3 =$	$4 \times 7 =$
$7 \times 7 =$	$6 \times 3 =$
$9 \times 3 =$	$8 \times 7 =$
$3 \times 7 =$	$7 \times 3 =$
$6 \times 3 =$	$9 \times 7 =$
$8 \times 7 =$	$0 \times 3 =$
$4 \times 3 =$	$5 \times 7 =$
$2 \times 7 =$	$1 \times 3 =$
$3 \times 3 =$	$7 \times 7 =$
$6 \times 7 =$	$9 \times 3 =$
$8 \times 3 =$	$0 \times 7 =$
$4 \times 7 =$	$5 \times 3 =$
$2 \times 3 =$	$1 \times 7 =$

DO AT HOME

$2 \times 7 =$	$9 \times 3 =$
$1 \times 3 =$	$3 \times 7 =$
$5 \times 7 =$	$8 \times 3 =$
$7 \times 3 =$	$4 \times 7 =$
$6 \times 7 =$	$0 \times 3 =$
$2 \times 3 =$	$9 \times 7 =$
$1 \times 7 =$	$3 \times 3 =$
$5 \times 3 =$	$8 \times 7 =$
$7 \times 7 =$	$4 \times 3 =$
$6 \times 3 =$	$0 \times 7 =$
$6 \times 7 =$	$1 \times 3 =$
$8 \times 3 =$	$4 \times 7 =$
$3 \times 7 =$	$0 \times 3 =$
$2 \times 3 =$	$9 \times 7 =$
$5 \times 7 =$	$7 \times 3 =$
$6 \times 3 =$	$1 \times 7 =$
$8 \times 7 =$	$4 \times 3 =$
$3 \times 3 =$	$0 \times 7 =$
$2 \times 7 =$	$9 \times 3 =$
$5 \times 3 =$	$7 \times 7 =$

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CLASS SPEED COMPETITION

A.

$5 \times 7 =$	$1 \times 3 =$
$0 \times 3 =$	$4 \times 7 =$
$2 \times 7 =$	$6 \times 3 =$
$8 \times 3 =$	$7 \times 7 =$
$3 \times 7 =$	$9 \times 3 =$

TIME:

B.

$5 \times 3 =$	$1 \times 7 =$
$0 \times 7 =$	$4 \times 3 =$
$2 \times 3 =$	$6 \times 7 =$
$8 \times 7 =$	$7 \times 3 =$
$3 \times 3 =$	$9 \times 7 =$

TIME:

C.

$7 \times 7 =$	$8 \times 3 =$
$9 \times 3 =$	$4 \times 7 =$
$5 \times 7 =$	$2 \times 3 =$
$0 \times 3 =$	$3 \times 7 =$
$1 \times 7 =$	$6 \times 3 =$

TIME:

D.

$7 \times 3 =$	$8 \times 7 =$
$9 \times 7 =$	$4 \times 3 =$
$5 \times 3 =$	$2 \times 7 =$
$0 \times 7 =$	$3 \times 3 =$
$1 \times 3 =$	$6 \times 7 =$

TIME:

Mixed Multipliers

IN CLASS

A.

$1 \times 1 =$	$6 \times 6 =$
$2 \times 2 =$	$7 \times 7 =$
$3 \times 3 =$	$8 \times 8 =$
$4 \times 4 =$	$9 \times 9 =$
$5 \times 5 =$	$0 \times 0 =$

B.

$5 \times 9 =$	$9 \times 1 =$
$4 \times 8 =$	$8 \times 2 =$
$3 \times 7 =$	$7 \times 3 =$
$2 \times 6 =$	$6 \times 4 =$
$1 \times 5 =$	$0 \times 5 =$

C.

$5 \times 6 =$	$0 \times 6 =$
$9 \times 7 =$	$7 \times 7 =$
$4 \times 8 =$	$2 \times 8 =$
$8 \times 9 =$	$6 \times 9 =$
$3 \times 0 =$	$1 \times 0 =$

D.

$7 \times 1 =$	$4 \times 8 =$
$1 \times 5 =$	$3 \times 7 =$
$2 \times 9 =$	$6 \times 6 =$
$0 \times 4 =$	$9 \times 2 =$
$5 \times 3 =$	$8 \times 0 =$

Name _____

DO AT HOME

$9 \times 6 =$	$3 \times 3 =$
$4 \times 9 =$	$5 \times 8 =$
$6 \times 2 =$	$2 \times 7 =$
$0 \times 7 =$	$1 \times 4 =$
$7 \times 6 =$	$8 \times 5 =$
$7 \times 7 =$	$5 \times 5 =$
$3 \times 8 =$	$4 \times 2 =$
$2 \times 6 =$	$3 \times 7 =$
$9 \times 9 =$	$1 \times 8 =$
$6 \times 2 =$	$8 \times 0 =$
$2 \times 5 =$	$5 \times 9 =$
$9 \times 1 =$	$8 \times 2 =$
$3 \times 8 =$	$4 \times 0 =$
$6 \times 6 =$	$0 \times 4 =$
$7 \times 3 =$	$1 \times 7 =$
$2 \times 9 =$	$8 \times 8 =$
$6 \times 7 =$	$9 \times 2 =$
$3 \times 3 =$	$4 \times 4 =$
$7 \times 0 =$	$2 \times 6 =$
$5 \times 5 =$	$0 \times 1 =$

DO AT HOME

$7 \times 7 =$	$1 \times 1 =$
$8 \times 8 =$	$3 \times 3 =$
$6 \times 6 =$	$4 \times 4 =$
$9 \times 9 =$	$5 \times 5 =$
$0 \times 0 =$	$2 \times 2 =$
$2 \times 8 =$	$9 \times 6 =$
$7 \times 5 =$	$4 \times 7 =$
$8 \times 3 =$	$6 \times 4 =$
$5 \times 2 =$	$3 \times 5 =$
$1 \times 0 =$	$0 \times 9 =$
$6 \times 7 =$	$3 \times 8 =$
$5 \times 6 =$	$9 \times 5 =$
$2 \times 9 =$	$7 \times 6 =$
$8 \times 2 =$	$4 \times 3 =$
$1 \times 4 =$	$0 \times 1 =$
$1 \times 7 =$	$3 \times 1 =$
$9 \times 8 =$	$4 \times 2 =$
$5 \times 6 =$	$8 \times 3 =$
$0 \times 5 =$	$6 \times 9 =$
$7 \times 4 =$	$2 \times 0 =$

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CLASS SPEED COMPETITION

A.

$0 \times 0 =$	$3 \times 3 =$
$7 \times 5 =$	$8 \times 4 =$
$5 \times 7 =$	$2 \times 6 =$
$6 \times 1 =$	$1 \times 8 =$
$9 \times 2 =$	$4 \times 9 =$

TIME:

B.

$2 \times 2 =$	$3 \times 3 =$
$9 \times 7 =$	$5 \times 4 =$
$6 \times 8 =$	$4 \times 5 =$
$7 \times 6 =$	$8 \times 0 =$
$1 \times 9 =$	$0 \times 1 =$

TIME:

C.

$2 \times 0 =$	$4 \times 9 =$
$0 \times 6 =$	$5 \times 1 =$
$6 \times 8 =$	$9 \times 5 =$
$7 \times 7 =$	$1 \times 2 =$
$3 \times 3 =$	$8 \times 4 =$

TIME:

D.

$1 \times 6 =$	$4 \times 5 =$
$8 \times 9 =$	$3 \times 7 =$
$9 \times 2 =$	$0 \times 1 =$
$2 \times 3 =$	$6 \times 4 =$
$5 \times 0 =$	$7 \times 8 =$

TIME:

More Mixed Multipliers

IN CLASS

A.

$9 \times 8 =$	$7 \times 6 =$
$5 \times 4 =$	$3 \times 8 =$
$9 \times 7 =$	$2 \times 6 =$
$5 \times 7 =$	$3 \times 7 =$
$1 \times 5 =$	$0 \times 9 =$

B.

$2 \times 3 =$	$4 \times 0 =$
$6 \times 9 =$	$3 \times 6 =$
$9 \times 2 =$	$0 \times 4 =$
$8 \times 7 =$	$1 \times 8 =$
$5 \times 5 =$	$7 \times 1 =$

C.

$2 \times 7 =$	$9 \times 1 =$
$6 \times 2 =$	$7 \times 0 =$
$1 \times 6 =$	$3 \times 9 =$
$0 \times 8 =$	$5 \times 3 =$
$8 \times 5 =$	$4 \times 4 =$

D.

$1 \times 8 =$	$6 \times 9 =$
$7 \times 5 =$	$5 \times 2 =$
$3 \times 4 =$	$8 \times 3 =$
$9 \times 1 =$	$4 \times 6 =$
$0 \times 0 =$	$2 \times 7 =$

Name _____

DO AT HOME

$2 \times 3 =$	$8 \times 7 =$
$1 \times 4 =$	$9 \times 0 =$
$5 \times 6 =$	$6 \times 5 =$
$0 \times 9 =$	$4 \times 1 =$
$7 \times 8 =$	$3 \times 2 =$
$6 \times 2 =$	$2 \times 6 =$
$9 \times 8 =$	$0 \times 4 =$
$5 \times 7 =$	$7 \times 5 =$
$4 \times 0 =$	$8 \times 9 =$
$3 \times 6 =$	$6 \times 3 =$
$1 \times 2 =$	$4 \times 3 =$
$9 \times 9 =$	$8 \times 1 =$
$5 \times 8 =$	$2 \times 0 =$
$0 \times 5 =$	$7 \times 7 =$
$2 \times 4 =$	$6 \times 6 =$
$5 \times 7 =$	$6 \times 4 =$
$3 \times 2 =$	$9 \times 3 =$
$1 \times 9 =$	$4 \times 1 =$
$8 \times 0 =$	$0 \times 8 =$
$7 \times 6 =$	$2 \times 5 =$

DO AT HOME

$4 \times 1 =$	$2 \times 8 =$
$6 \times 3 =$	$8 \times 0 =$
$5 \times 9 =$	$3 \times 2 =$
$7 \times 6 =$	$9 \times 5 =$
$1 \times 7 =$	$0 \times 4 =$
$5 \times 2 =$	$7 \times 6 =$
$6 \times 7 =$	$8 \times 3 =$
$1 \times 8 =$	$3 \times 4 =$
$2 \times 5 =$	$0 \times 1 =$
$4 \times 9 =$	$9 \times 0 =$
$3 \times 3 =$	$6 \times 8 =$
$0 \times 7 =$	$9 \times 6 =$
$7 \times 2 =$	$4 \times 1 =$
$8 \times 5 =$	$1 \times 0 =$
$5 \times 9 =$	$2 \times 4 =$
$7 \times 9 =$	$1 \times 1 =$
$2 \times 8 =$	$3 \times 7 =$
$9 \times 2 =$	$5 \times 5 =$
$0 \times 6 =$	$4 \times 4 =$
$8 \times 5 =$	$6 \times 3 =$

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CLASS SPEED COMPETITION

A.

$9 \times 7 =$	$4 \times 2 =$
$8 \times 8 =$	$3 \times 0 =$
$5 \times 6 =$	$2 \times 1 =$
$0 \times 9 =$	$6 \times 3 =$
$1 \times 5 =$	$7 \times 4 =$

TIME:

B.

$2 \times 6 =$	$6 \times 9 =$
$9 \times 8 =$	$3 \times 3 =$
$5 \times 2 =$	$7 \times 5 =$
$1 \times 0 =$	$0 \times 4 =$
$8 \times 7 =$	$4 \times 1 =$

TIME:

C.

$1 \times 5 =$	$2 \times 8 =$
$0 \times 3 =$	$3 \times 5 =$
$6 \times 6 =$	$9 \times 1 =$
$5 \times 2 =$	$4 \times 0 =$
$7 \times 7 =$	$8 \times 4 =$

TIME:

D.

$3 \times 1 =$	$8 \times 8 =$
$5 \times 5 =$	$9 \times 3 =$
$2 \times 9 =$	$1 \times 4 =$
$0 \times 2 =$	$4 \times 6 =$
$7 \times 7 =$	$6 \times 0 =$

TIME:

MULTIPLICATION
Time Progress Chart

EXERCISE ● Pupil is to add the same fact repeatedly *without counting how many times* until the fixed total of 10 times the fact is achieved in at least 15 seconds. Having accomplished this speed with accuracy, pupil is prepared to perform calculations using these manipulations.

EXERCISE O Pupil follows same procedure, now counting *how many times* the fact is repeated until fixed total is achieved.

SPEED
Within 5 Seconds: Excellent
Within 10 Seconds: Good
Within 15 Seconds: Average

TRIAL / FACT		COUNT TO THIS FIXED TOTAL	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
1	●	10																		
	O																			
5	●	50																		
	O																			
9	●	90																		
	O																			
6	●	60																		
	O																			
4	●	40																		
	O																			
2	●	20																		
	O																			
8	●	80																		
	O																			
3	●	30																		
	O																			
7	●	70																		
	O																			

Enter time required to achieve fixed total using both exercise methods

Speed Test
For 1st or 2nd Degree Chisanbop

TIME LIMIT
1st DEGREE: 6 MINUTES/45 SECONDS
2nd DEGREE: 6 MINUTES
Minimum Correct: 8 PROBLEMS

(1)	(2)	(3)	(4)	(5)
128	496	794	984	967
345	753	365	126	213
+679	+821	+128	+537	+485

(6)	(7)	(8)	(9)	(10)
920	607	135	991	126
435	976	240	785	684
+678	+435	+789	+365	+573

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Sample Calculation Speed Test
For 3rd or 4th Degree Chisanbop

TIME LIMIT
3rd DEGREE: 7 MINUTES
4th DEGREE: 6 MINUTES
Minimum Correct: 8 PROBLEMS

(1)	(2)	(3)	(4)	(5)
346	551	905	567	850
782	689	843	370	732
561	379	721	496	649
+915	+771	+438	+654	+195

(6)	(7)	(8)	(9)	(10)
537	764	854	136	958
816	328	269	259	742
429	519	137	874	631
+708	+186	+555	+249	+663

Sample Speed Test
For 5th or 6th Degree Chisanbop

TIME LIMIT
5th DEGREE: 6 MINUTES/40 SECONDS
6th DEGREE: 5 MINUTES/20 SECONDS
Minimum Correct: 8 PROBLEMS

(1)	(2)	(3)	(4)	(5)
1,684	7,785	3,240	5,976	9,435
6,215	1,991	5,318	7,064	2,095
9,573	7,365	4,789	6,435	1,678
+ 9,821	+ 3,674	+ 2,198	+ 5,564	+ 9,902

(6)	(7)	(8)	(9)	(10)
3,120	8,126	5,365	4,753	6,345
8,967	4,896	4,975	6,949	8,213
5,847	1,537	5,128	2,821	6,679
+ 1,685	+ 7,850	+ 4,376	+ 9,065	+ 6,509

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Sample Speed Test
For 7th or 8th Degree Chisanbop

TIME LIMIT
7th DEGREE: 5 MINUTES/50 SECONDS
8th DEGREE: 5 MINUTES
Minimum Correct: 8 PROBLEMS

(1)	(2)	(3)	(4)	(5)
1,289	4,763	8,980	5,564	2,099
3,759	5,637	9,814	5,346	6,781
6,215	9,119	1,732	4,607	5,902
6,841	7,875	3,542	6,795	5,439
+ 2,299	+ 8,800	+ 4,529	+ 9,029	+ 5,645

(6)	(7)	(8)	(9)	(10)
7,698	8,507	5,567	5,319	9,056
2,031	7,351	9,345	6,425	6,679
7,485	4,818	6,827	8,097	3,128
5,186	2,966	1,345	9,246	6,345
+ 1,289	+ 7,751	+ 9,029	+ 6,662	+ 7,535

Sample Speed Test
9th or 10th Degree Chisanbop

TIME LIMIT
9th DEGREE: 5 MINUTES
10th DEGREE: 4 MINUTES
Minimum Correct: 8 PROBLEMS

(1)	(2)	(3)	(4)	(5)
6,720	5,873	5,593	5,364	9,066
4,751	4,829	6,813	8,092	3,163
1,298	7,707	9,067	6,619	7,556
1,385	5,118	4,527	2,597	7,928
8,689	6,651	4,529	4,662	4,535
+7,850	+6,734	+1,568	+4,169	+7,337

(6)	(7)	(8)	(9)	(10)
2,607	4,664	8,014	3,637	1,327
5,594	7,095	3,242	1,975	8,599
5,699	9,255	2,989	8,800	6,628
8,012	5,346	9,817	7,198	1,451
3,495	6,790	3,545	4,675	9,292
+1,892	+4,439	+5,672	+1,559	+8,435

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Achievement Chart for Calculation Speed Tests

A 10 Addition Problems of the Type Noted	B Time Limit: 10 Problems	C Equivalent Calculation Speed	D Pupil Achieving Time Limit is at This Chisanbop Level
3 Columns/ 3 Rows	6 Minutes/45 Sec.	4.5 Sec. Per Number	lst Degree Chisanbop
3 Columns/ 3 Rows	6 Minutes	4.0 Sec. Per Number	2nd Degree Chisanbop
3 Columns/ 4 Rows	7 Minutes	3.5 Sec. Per Number	3rd Degree Chisanbop
3 Columns/ 4 Rows	6 Minutes	3.0 Sec. Per Number	4th Degree Chisanbop
4 Columns/ 4 Rows	6 Minutes/40 Sec.	2.5 Sec. Per Number	5th Degree Chisanbop
4 Columns/ 4 Rows	5 Minutes/20 Sec.	2.0 Sec. Per Number	6th Degree Chisanbop
4 Columns/ 5 Rows	5 Minutes/50 Sec.	1.75 Sec. Per Number	7th Degree Chisanbop
4 Columns/ 5 Rows	5 Minutes	1.5 Sec. Per Number	8th Degree Chisanbop
4 Columns/ 6 Rows	5 Minutes	1.25 Sec. Per Number	9th Degree Chisanbop
4 Columns/ 6 Rows	4 Minutes	1.0 Sec. Per Number	10th Degree Chisanbop
5 Columns/ 6 Rows	4 Minutes	1.25 Numbers Per Sec.	11th Degree Chisanbop
5 Columns/ 6 Rows	3 Minutes/20 Sec.	1.5 Numbers Per Sec.	12th Degree Chisanbop
5 Columns/ 8 Rows	3 Minutes/49 Sec.	1.75 Numbers Per Sec.	13th Degree Chisanbop
5 Columns/ 8 Rows	3 Minutes/20 Sec.	2.0 Numbers Per Sec.	14th Degree Chisanbop
5 Columns/10 Rows	3 Minutes/20 Sec.	2.5 Numbers Per Sec.	15th Degree Chisanbop
5 Columns/10 Rows	2 Minutes/47 Sec.	3.0 Numbers Per Sec.	16th Degree Chisanbop
6 Columns/10 Rows	2 Minutes/51 Sec.	3.5 Numbers Per Sec.	17th Degree Chisanbop
6 Columns/10 Rows	2 Minutes/30 Sec.	4.0 Numbers Per Sec.	18th Degree Chisanbop
7 Columns/10 Rows	2 Minutes/36 Sec.	4.5 Numbers Per Sec.	19th Degree Chisanbop
7 Columns/10 Rows	2 Minutes/20 Sec.	5.0 Numbers Per Sec.	20th Degree Chisanbop

Sample Tests for the first 10 Degrees appear on the preceeding pages. Teacher is cautioned to allow time for turning Test Page right side up before timing begins.

CHISANBOP AWARDS

On receipt of written notification of each pupil's Achievement at the conclusion of each term, Chisanbop Enterprises will issue individual certificates to the school for distribution. A copy of pupil's completed Achievement Test must accompany notification.

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Finger Calculation

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